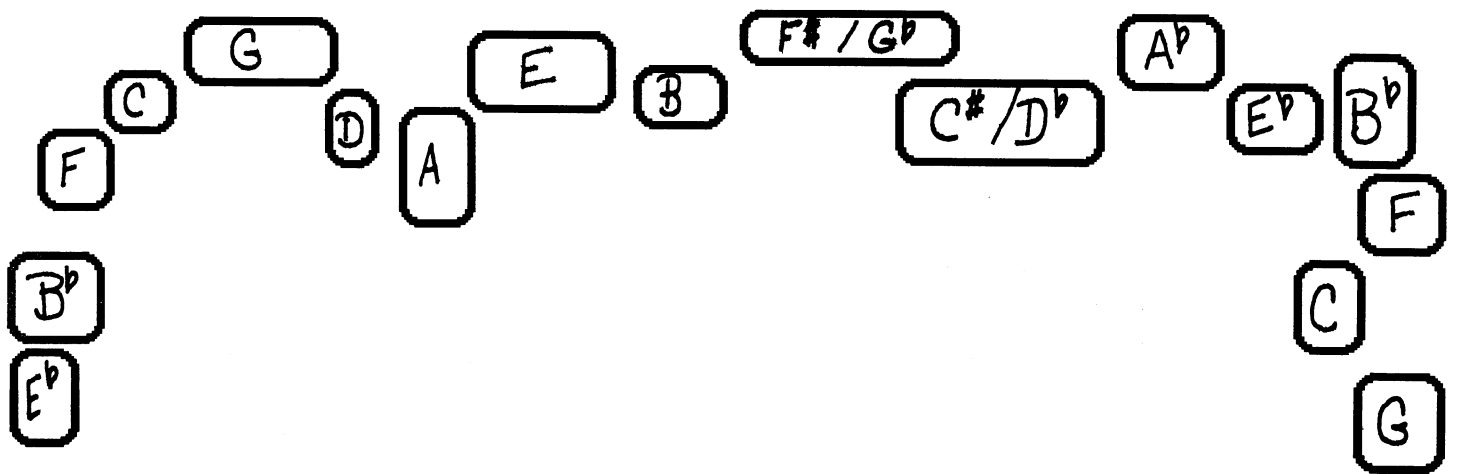
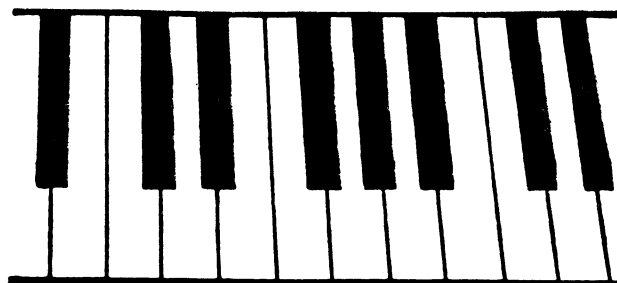




THEORY FUNDAMENTALS WORKBOOK

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FOREWORD

This workbook is a practical method for learning the rudiments of music, which are essential to a thorough understanding of music in general. Designed as a supplement to professional instruction rather than a manual for self instruction, the text is intentionally brief. The emphasis is on using practical exercises to develop fluency.

Aural, vocal, and keyboard skills must be integrated into the study of music theory from the very beginning. I encourage all students, regardless of their principal instrument, to learn to hear, sing, and play on the piano everything that they do in theory.

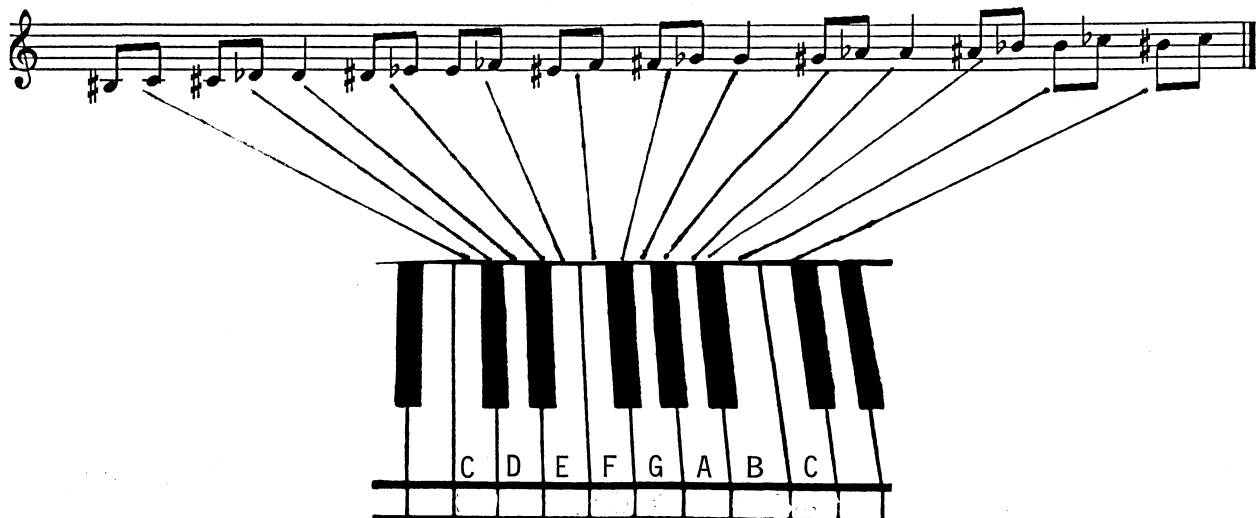
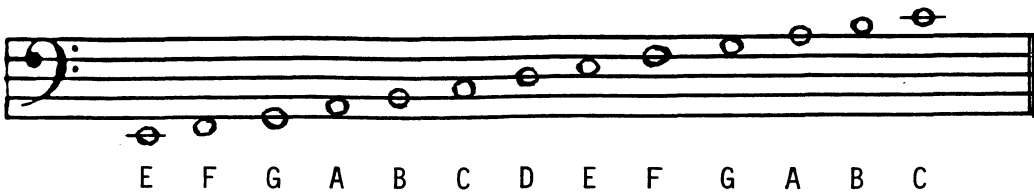
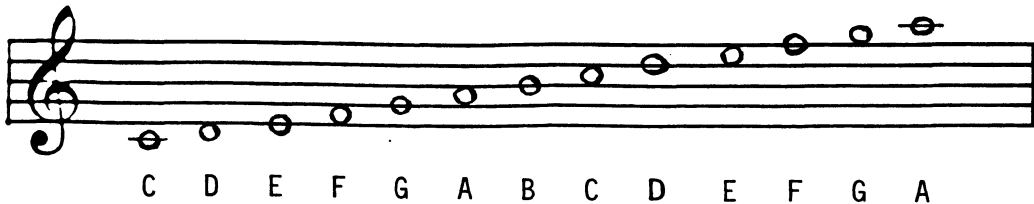
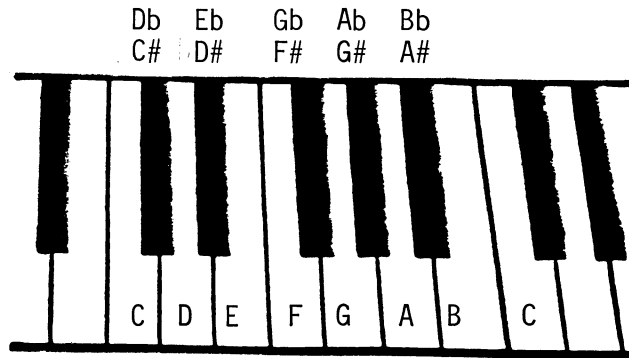
All exercises in this book should be completed thoroughly. Usually a sample will be completed in brackets for each exercise, as a demonstration. Fluency with these basic materials of music will be a great asset to any further musical endeavors. For students who need additional exercises, suggestions for further study will be given.

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CHAPTER 1 - TONES, SEMITONES, AND THE MAJOR SCALE

It is essential to know the keyboard when studying music theory. Below are some diagrams which will serve as references. The keyboard should be memorized immediately, as should the notes within the treble and bass clefs, since they are used most often.



TONES AND SEMITONES

The distance between adjacent keys on the keyboard is a **semitone**. A semitone containing two notes having the same letter name, such as C-C#, is a **chromatic semitone**, while a semitone containing notes with adjacent letter names, such as B-C, is a **diatonic semitone**. A **whole tone** is made up of two successive semitones. Combining the semitones above, we see that B-C# is a whole tone.

You may need to review the following in order to complete the exercises below:

A flat sign $\flat$ lowers a note by one semitone.

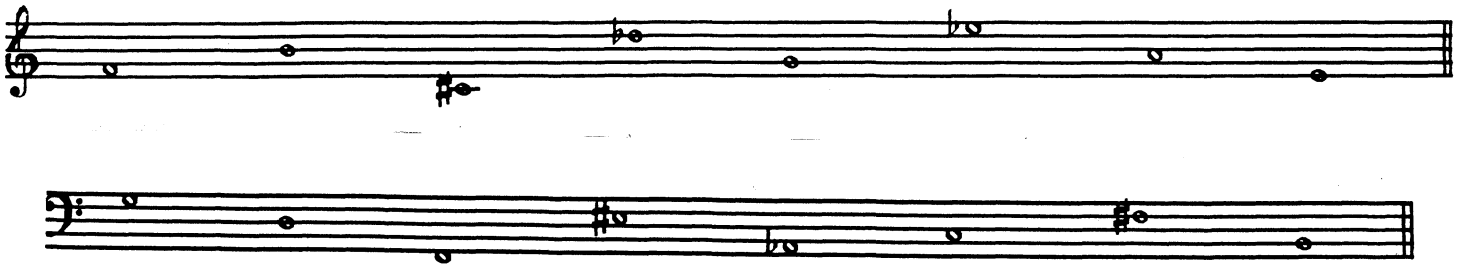
A sharp sign $\sharp$ raises a note by a semitone.

A natural sign $\natural$ cancels a previous accidental.

A double flat sign $\flat\flat$ lowers a note by two semitones.

A double sharp sign $\sharp\sharp$ raises a note by two semitones.

1. Write a chromatic semitone above each of the given notes.



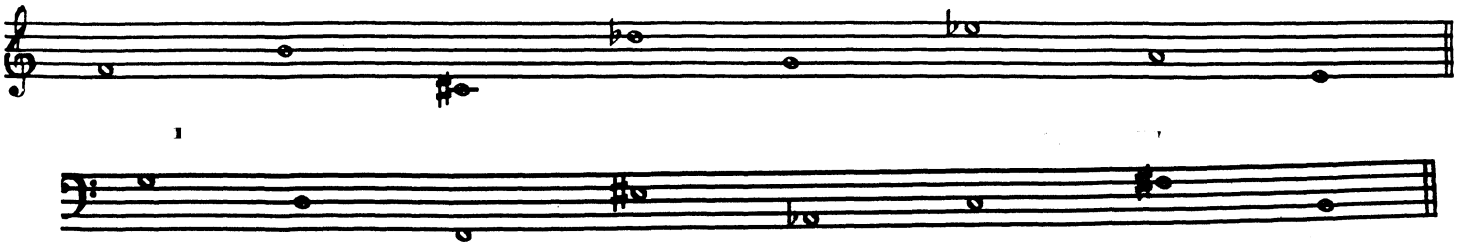
2. Write a diatonic semitone above each of the given notes.



3. Write a chromatic semitone below the given note.



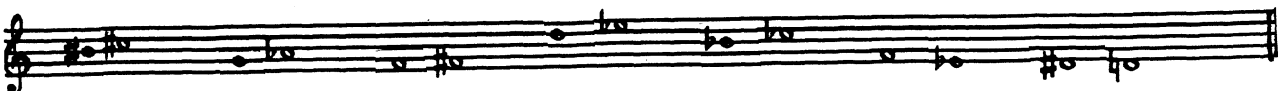
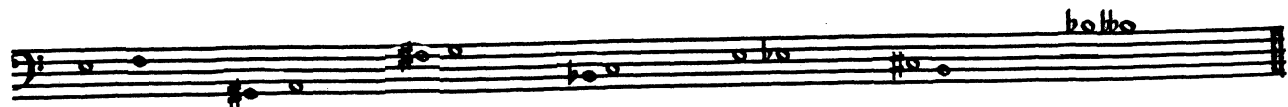
4. Write a diatonic semitone below the given note.



5. The following are tones and semitones. Label them as whole tones (T), chromatic semitones (CS), or diatonic semitones (DS).



(DS)



6. Where on the keyboard are semitones found between white notes?

6

7. Write a whole tone above the given note which uses an adjacent letter name. Whole tones with adjacent letter names are most common.



8. Write similar whole tones below the given notes.

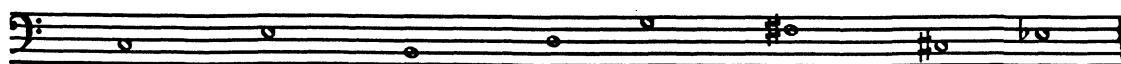


9. Write diatonic semitones (DS), chromatic semitones (CS), and whole tones (T), above the given notes as indicated.



DS CS T CS T DS T CS T

10. Write the indicated intervals below the given notes.



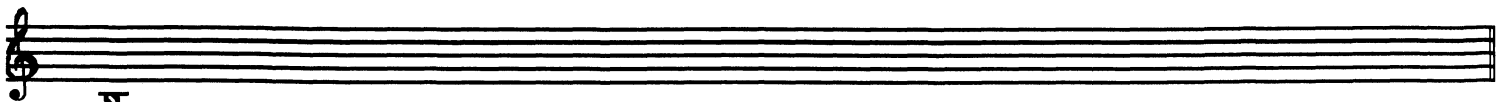
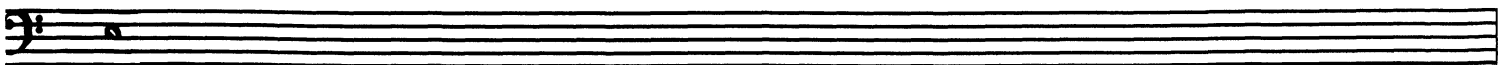
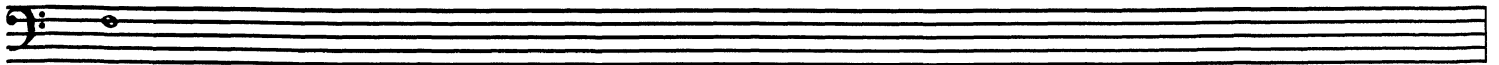
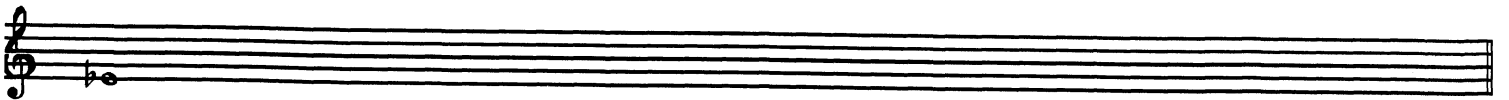
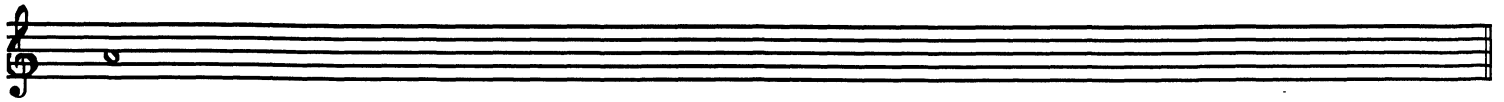
T CS T DS T CS T CS

THE CHROMATIC SCALE

Like semitones, scales also come in diatonic and chromatic varieties. The most common diatonic scales are major and minor, and are centered around the tonic, hence the name diatonic. The **chromatic scale**, which has no real tonic, is simply all twelve notes. They are all a semitone apart and of equal importance. It can start and end on any note, and is usually written with sharps ascending and flats descending, to minimize the number of accidentals. See example below.



1. On the manuscript below, write one-octave chromatic scales ascending and descending on the given notes.



THE MAJOR SCALE

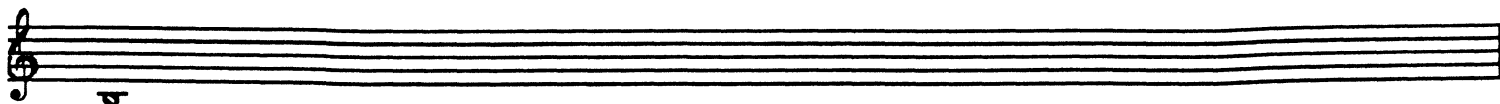
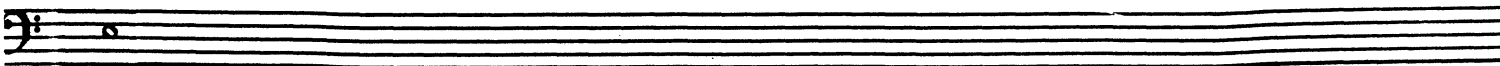
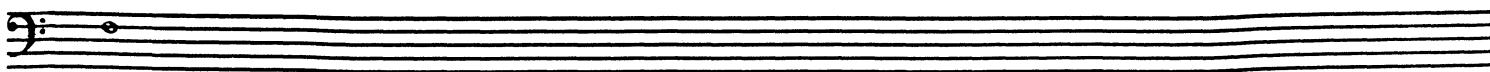
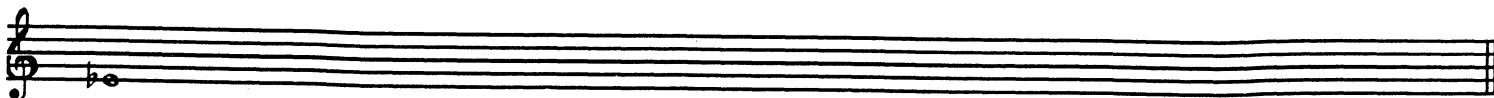
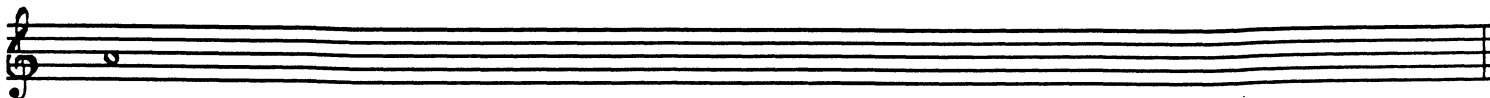
The **major scale** is the basis for many musical works. It is made up of the following series of tones (T) and semitones (S).

T T S T T T S

It can be built on any note, and the easiest one to start with is from C to C on the keyboard, using only white notes. This is called the **C major scale**:



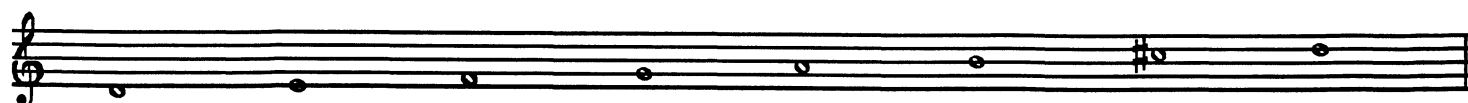
1. Using the same series of tones and semitones, construct major scales on the given notes.



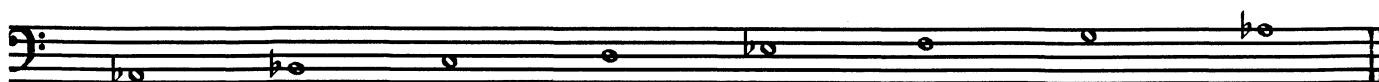
Degrees of the major scale can be labeled in a number of ways. The following table shows three common types of labels.

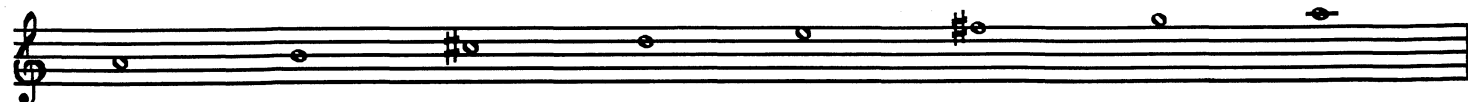
$\hat{1}$	do	tonic
$\hat{2}$	re	supertonic
$\hat{3}$	mi	mediant
$\hat{4}$	fa	subdominant
$\hat{5}$	so	dominant
$\hat{6}$	la	submediant
$\hat{7}$	ti	leading tone
$\hat{8} (\hat{1})$	do	tonic

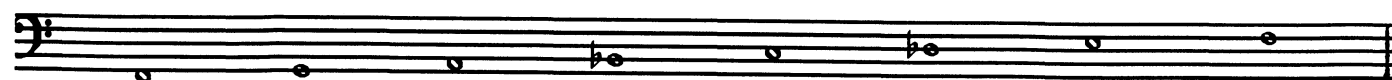
1. In the following major scales, find the error if there is one and state which scale degree is wrong using all three labels. If the scale is correct, simply write correct.

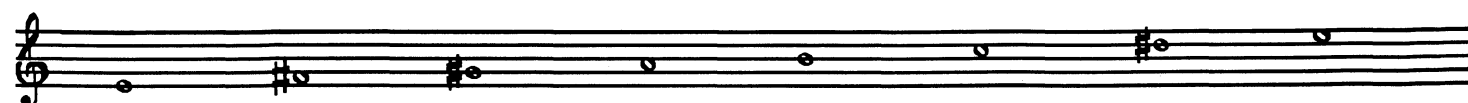


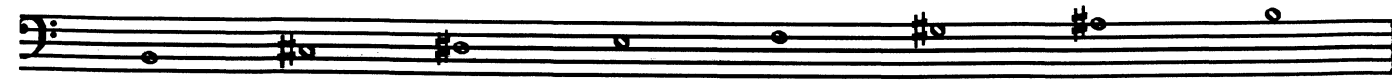
$\hat{3}$ mi mediant











THINGS TO KNOW

1. The keyboard
2. Treble and bass clefs
3. Signs for accidentals
4. Diatonic and chromatic semitones
5. The chromatic scale
6. The major scale (T T S T T T S)
7. Scale degree names

Suggestions for further study

1. Write the chromatic scale covering the entire span of both clefs.
2. Write diatonic and chromatic semitones above and below every note in this scale.
3. Write major scales on every note in both clefs.
4. Play the above scales on the piano.

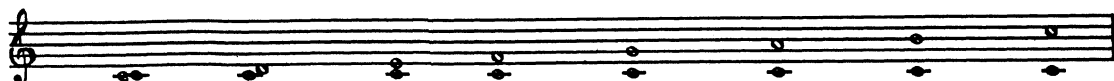
CHAPTER 2 - INTERVALS

An interval is the distance between two pitches. Each interval has a specific **size** and **quality**. The size is determined by the number of letter-names counted **inclusively**. For example, A-C would be a 3rd.

1. For the following intervals, give the size (3rd, 4th etc.). Since you are only giving the size and not the quality, flats and sharps may be ignored for now.

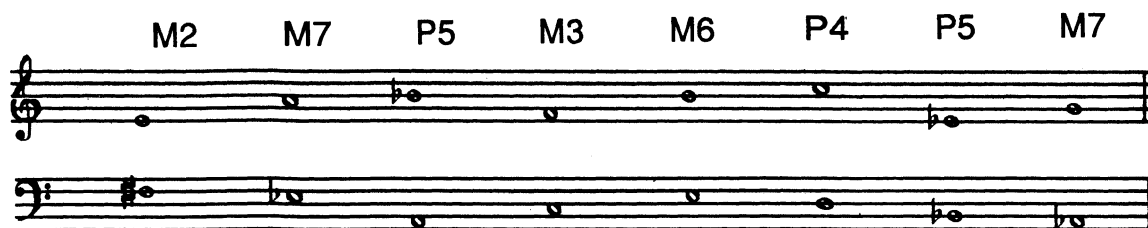


The specific intervals found in the major scale are very useful for the study of intervals. The following table gives the size and quality of intervals between the tonic and subsequent scale degrees. These are the same for every major scale.



perfect unison major 2 major 3 perfect 4 perfect 5 major 6 major 7 perfect 8

2. Using the major scales, construct the following intervals above the given notes. Treat the given note as the tonic and fill in the note of that scale which gives the indicated interval. (P = perfect, M = major)



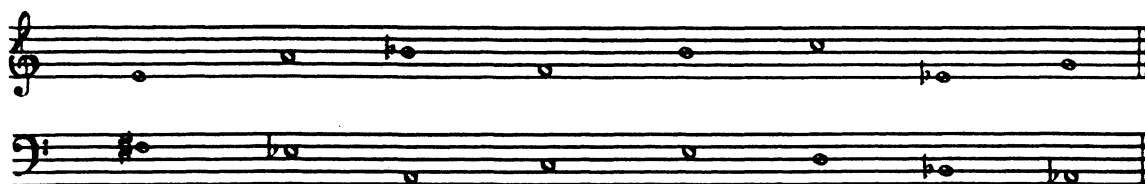
3. Identify the following intervals:



To construct intervals below a given note, simply treat the given note as the appropriate scale degree and fill in the tonic. For example, to find a major 3rd below D, use D as the third scale degree and Bb will be the tonic.

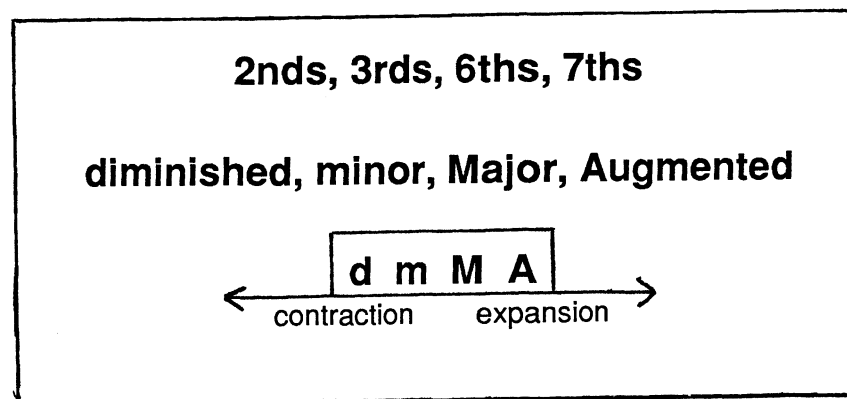
4. Construct the indicated intervals below the given note.

M2	P5	P4	M3	M6	M7	P4	M6
----	----	----	----	----	----	----	----

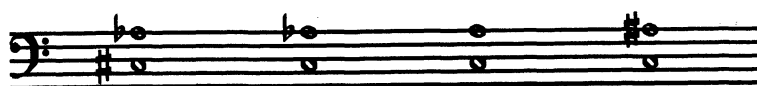


Intervals can be expanded or contracted by altering one or both of its notes. The size is always given by the letter names, but the quality may be different than that found between the tonic and other degrees of the major scale. Using the chart below, for example:

- a major 3rd:
- contracted by 1 semitone = a minor 3rd
 - contracted by 2 semitones = a diminished 3rd
 - expanded by 1 semitone = an augmented 3rd

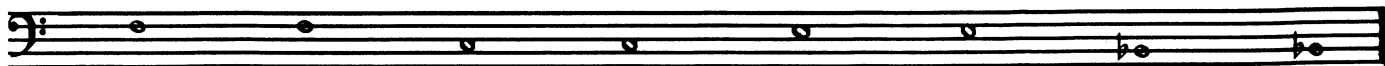


Do not change the letter names (that will change the interval number). The example below shows three types of sixths derived from the major sixth C-A.



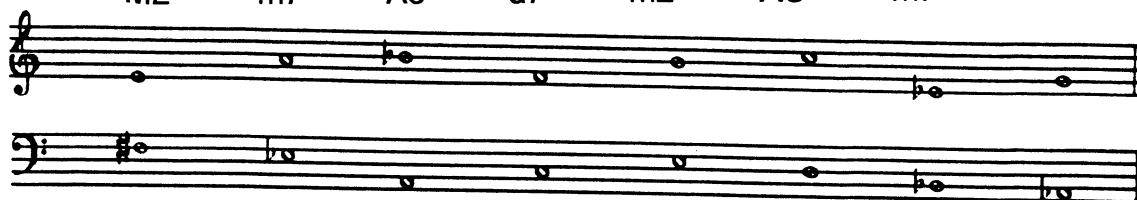
5. Construct the indicated intervals above the given note. The second interval of each pair should be a chromatic alteration of the first.

M2 m2 M3 A3 M7 d7 M6 m6

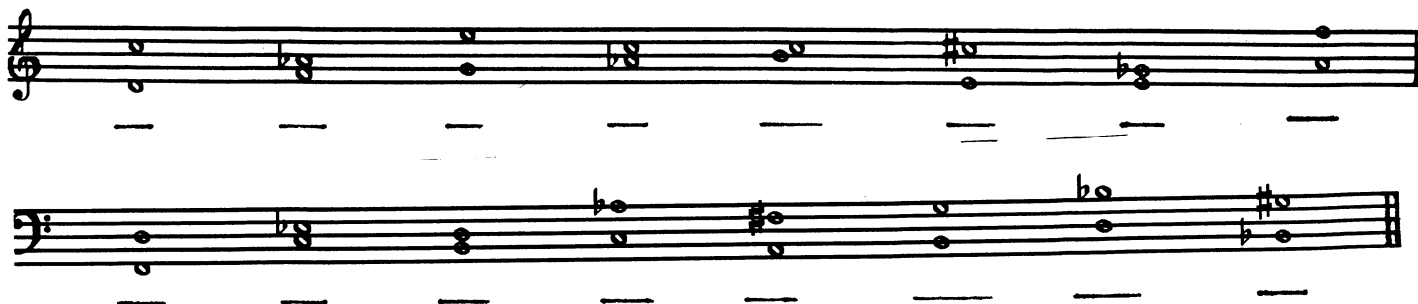


6. Construct the indicated intervals above the given notes.

M2 m7 A3 d7 m2 A6 m7 m3



7. Identify the following intervals.



To construct intervals below the given note, simply use the given note as the appropriate scale degree for the major interval (eg. 2 for A2), find the tonic and alter it as needed. For example, to write an augmented 2nd below D, treat D as scale degree 2, write C, and alter it to C $\flat$.

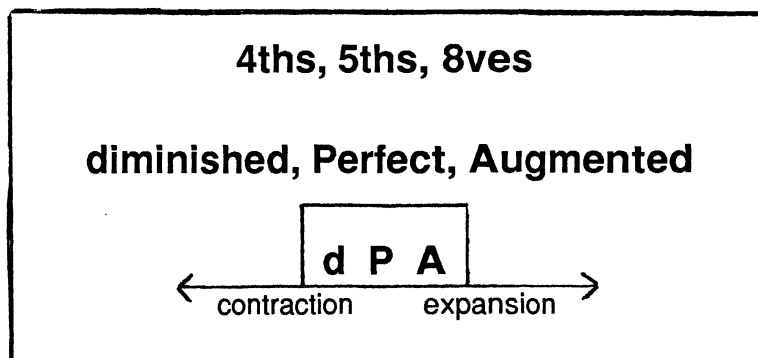
8. Construct the indicated intervals below the given note.

m2 m3 m7 m2 d6 m2 m7



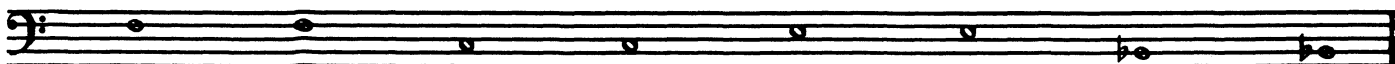
Fourths, fifths and octaves do not exist in major or minor form, only perfect, augmented and diminished form. Using the chart below:

a perfect 4th: -contracted by 1 semitone = a diminished 4th
 -expanded by 1 semitone = an augmented 4th

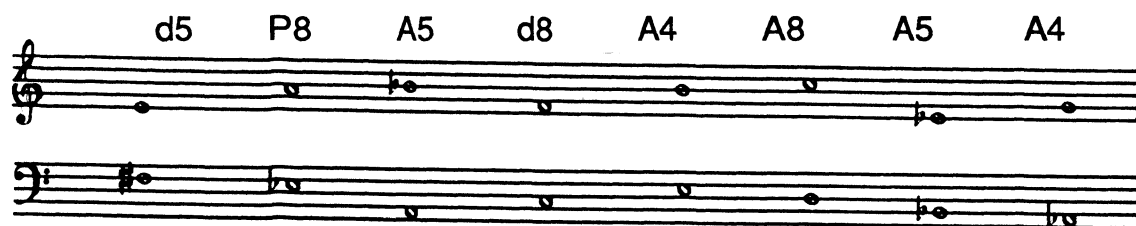


9. Using this chart, construct the following intervals above the given note. In each pair of intervals, the perfect interval will be followed by a chromatically altered one.

P5 d5 P4 A4 P8 d8 P5 A5



10. Construct the indicated intervals above the given note.

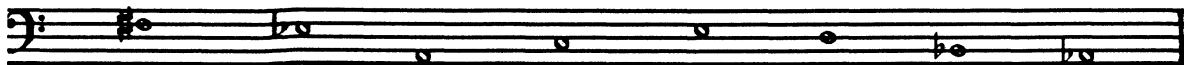


11. Identify the following intervals.



12. Construct the following intervals below the given note.

A4 A5 d5 A8 d5 A4 d8 d4



Remember that there are never any major or minor 4ths, 5ths, or 8ves. Similarly, there are never any perfect 2nds, 3rds, 6ths, or 7ths.

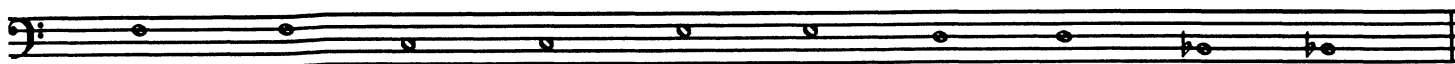
ENHARMONIC EQUIVALENTS

Enharmonic equivalents is just a fancy name for one pitch which has two letter names (Example F# and Gb). These sound the same but are spelled differently. Because their letter names are different, however, the interval label will be different (eg. E-F# = M2, E-Gb = d3).

1. Identify the following pairs of intervals. They will sound the same but have different labels.

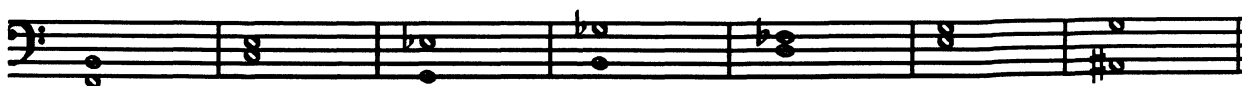
2. Construct the following pairs of intervals above the given notes.

A4 d5 M3 d4 m3 A2 m6 A5 M6 d7



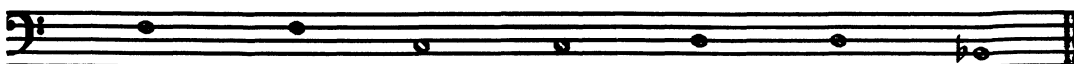
MORE INTERVAL EXERCISES

1. Identify the following intervals.



2. Construct the following intervals above the given notes.

M3 m3 A4 d7 d5 m7 P4



3. Construct the following intervals below the given notes.

M2 P5 A6 M7 P5 m2 M6



COMPOUND INTERVALS

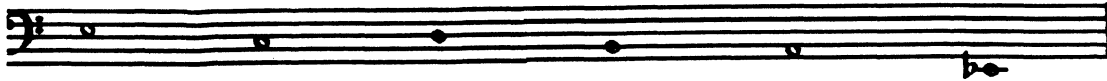
Intervals larger than an octave are called **compound** intervals. The rules for labeling and manipulating them are the same as those for the intervals studied above (**simple** intervals).

1. Label the following compound intervals.

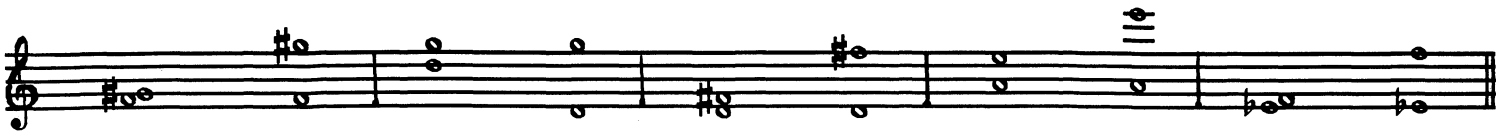


2. Construct the following intervals above the given note.

M9 m10 P12 A11 M10 M13



3. Identify the following pairs of simple and compound intervals.



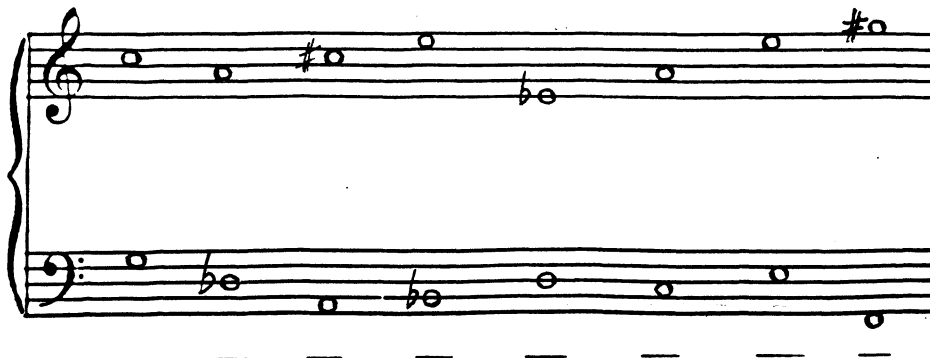
Notice that within each pair of intervals the same notes are present, and the quality is the same. In fact the intervals are identical except for octave displacement. For example, a minor 10th corresponds to a minor 3rd, a perfect 11th to a perfect 4th, etc. To reduce a compound interval to a simple one, just subtract 7. This avoids the complication of dealing with intervals such as the diminished 17th!

4. Construct the following compound intervals and beside them supply their corresponding simple intervals. When writing the notes for the simple interval, either bring the top note down an octave or the bottom note up an octave.



P12 m9 M10 P11 d12 m13

5. Label the following as simple intervals.



THINGS TO KNOW

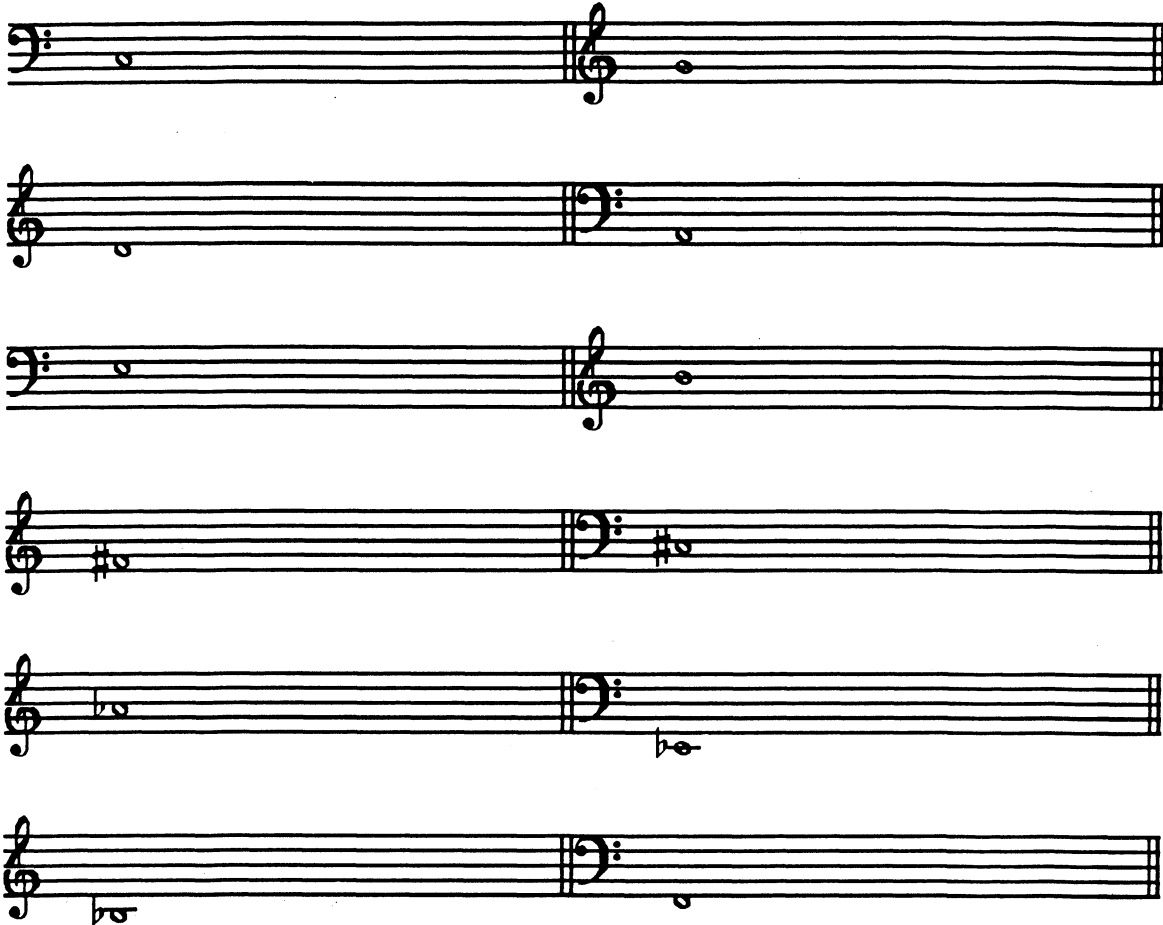
1. All major, minor, augmented and diminished intervals
2. How to expand and contract intervals
3. Enharmonic equivalents
4. Compound intervals
5. How to reduce compound intervals

Suggestions for further study

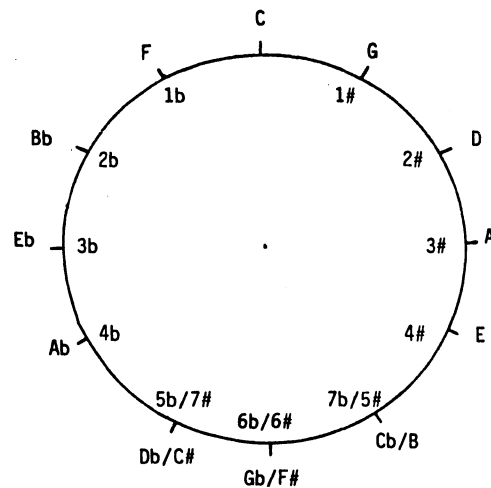
1. Memorize intervals from tonic, in the major scale.
2. Construct these intervals from every note.
3. Use expansion/contraction charts to produce all possible intervals.
4. Write an enharmonic equivalent for every note.
5. On several notes, write all possible compound intervals up to P12.

CHAPTER 3 - KEY SIGNATURES

1. Construct major scales, ascending only, on the following notes, and notice the pattern of accidentals needed.



The order of accidentals needed is that of increasing sharps (or decreasing flats). Notice also that the keys of these scales are arranged in ascending perfect 5ths. The diagram below is the **circle of fifths** and it shows this order of keys and the numbers of sharps or flats in each.



Instead of using accidentals, a key signature at the beginning of the music will serve the same purpose with much less work. For example, in the key of E, instead of writing a new accidental in front of every F, C, G & D, use a key signature of 4 sharps. Below are key signature patterns in treble and bass clefs.



The order in which sharps are used is:

F C G D A E B

The order in which flats are used is the reverse:

B E A D G C F

An easy way to remember this is:

Father **C**harles **G**oes **D**own **A**nd **E**nds **B**attle (sharps)

Battle **E**nds **A**nd **D**own **G**oes **C**harles' **F**ather (flats)

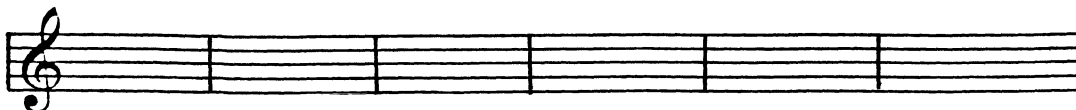
Or:

just count up by fifths from F# (sharps)
and down by fifths from Bb (flats).

In any case, memorize both the order of sharps and flats, and the key signatures for all major keys.

2. In the treble clef, write the key signatures for the keys given below.

A major Bb major E major F# major Db major Ab major

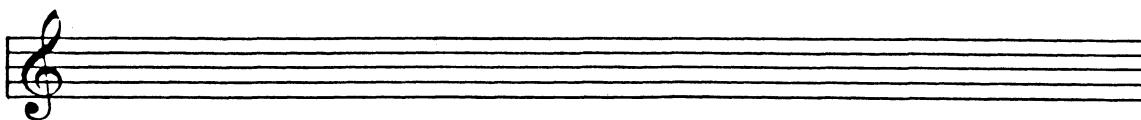


3. Identify the following major key signatures.

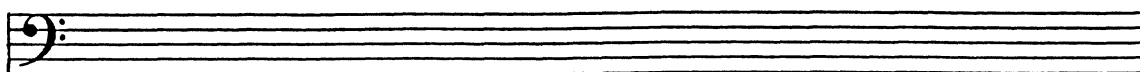


4. Using key signatures instead of accidentals, write the following ascending major scales.

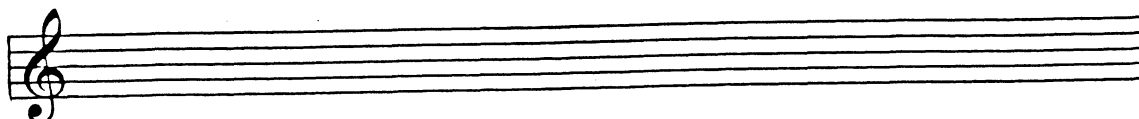
E $\flat$ Major



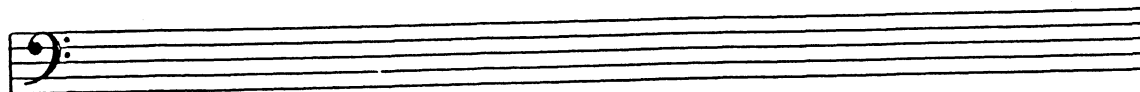
B Major



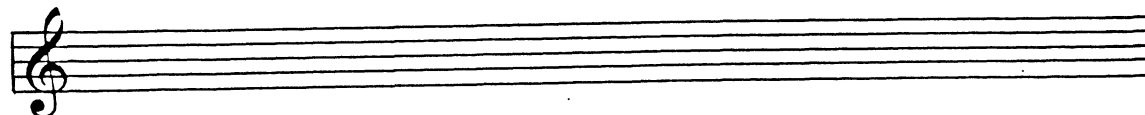
C $\sharp$ Major



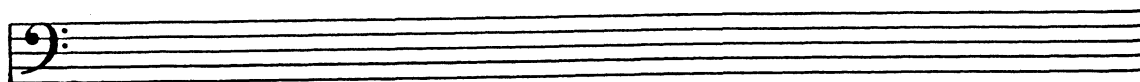
F Major



G Major



D Major



5. Using key signatures instead of accidentals, construct the indicated intervals above the given tonic note.

M7

M3

M6

M3

P5



6. Using key signatures and accidentals, construct the following intervals above the given tonic note.

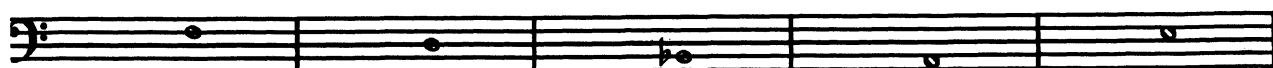
m3

A4

A2

d6

d5



THINGS TO KNOW

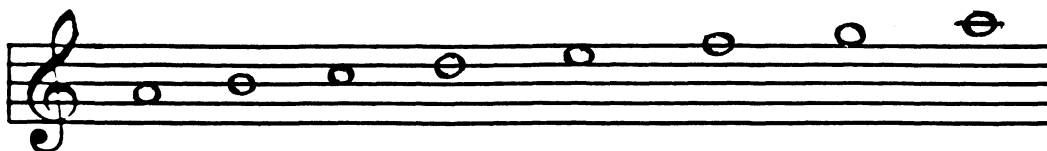
1. The order of sharps and flats
2. Key signature patterns in treble and bass clefs
3. The circle of fifths
4. Key signatures of all major keys
5. How to construct intervals using key signatures.

Suggestions for further study

1. Draw the two key signature patterns in both clefs.
2. Draw the circle of fifths.
3. Count perfect fifths up and down starting on any note.
4. Construct all major scales using key signatures.

CHAPTER 4 - MINOR SCALES & KEY SIGNATURES

The minor scale has three different forms, the **natural** minor, the **harmonic** minor, and the **melodic** minor. The easiest way to construct a natural minor scale is to simply start and end on scale degree $\hat{6}$ of a major scale. For example, in C Major, start and end on A, creating the A (natural) minor scale.



There is a significant relationship between these two scales, which have the same key signature, and A minor is called the **relative minor** of C Major. To find the relative minor key of a given major key, simply go down a minor 3rd, to scale degree $\hat{6}$ of the major key.

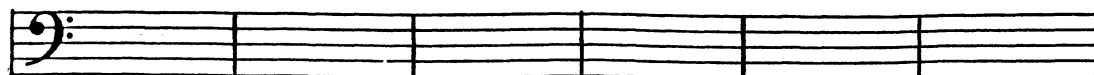
- For the following major keys, write the key signature on the staff and the relative minor key on the line below.

G Major E Major Bb Major Db Major F Major Ab Major

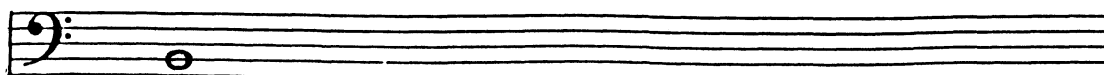


e min. _____

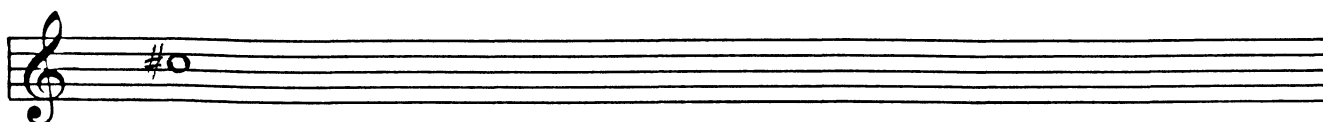
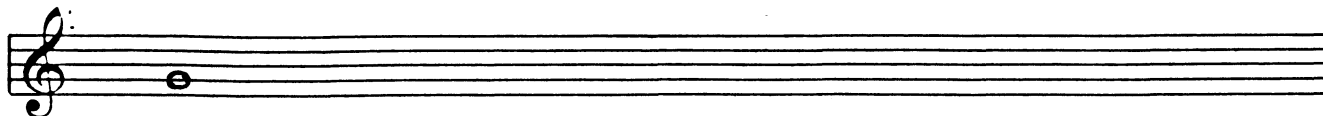
C Major F# Major B Major A Major Eb Major D Major



- Write natural minor scales on the following notes, supply the proper key signature, and mark the tones and semitones (T, S).



2. (cont'd) Natural minor scales



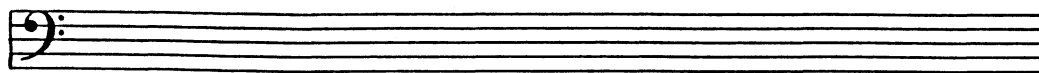
THE HARMONIC MINOR SCALE

The harmonic minor scale is like the natural minor but it contains an accidental which raises the leading tone. Using A Minor again, the key signature is the same (no sharps or flats) but a G# is needed to raise the leading tone. Mark the tones and semitones on the example and notice the augmented second now created by scale degrees $\hat{6}-\hat{7}$. This has an unmistakable sound which should be learned.

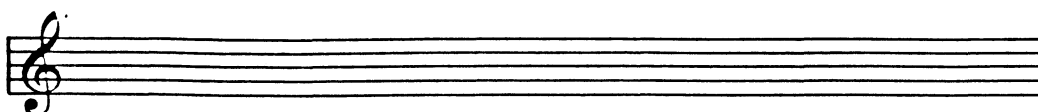


- Using key signatures, write the harmonic minor scales which correspond to the following major keys. Label their relative minor keys in the blanks provided.

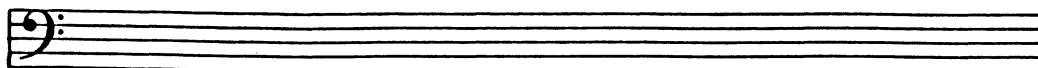
D Major _____



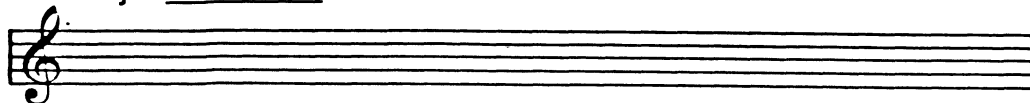
E Major _____



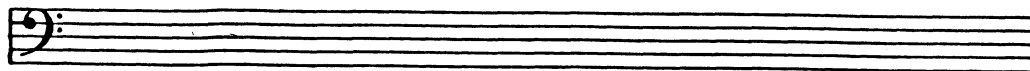
Bb Major _____



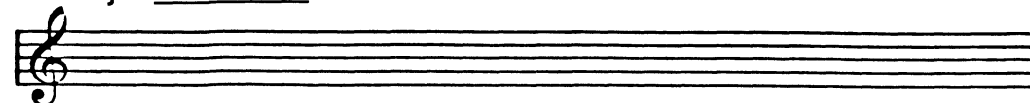
Db Major _____



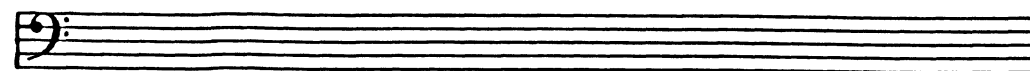
A Major _____



G Major _____



Eb Major _____



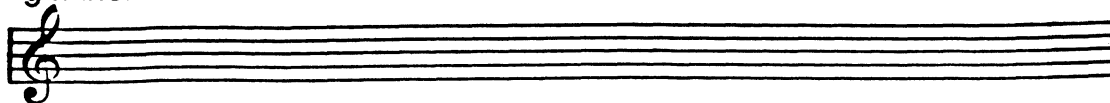
THE MELODIC MINOR SCALE

This scale is used most often in melodies. Scale degrees $\hat{6}$ & $\hat{7}$ are raised on the way up, and naturalized on the way down. So the descending form is exactly like the natural minor scale. The example shows the A melodic minor scale ascending and descending.

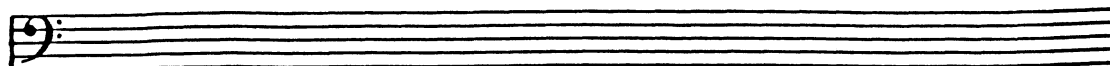


1. Construct the following melodic minor scales ascending and descending. Obtain the key signature from the relative major key (up a minor 3rd).

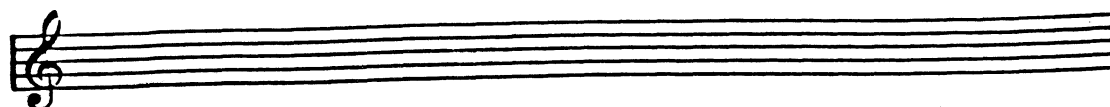
g minor



d minor

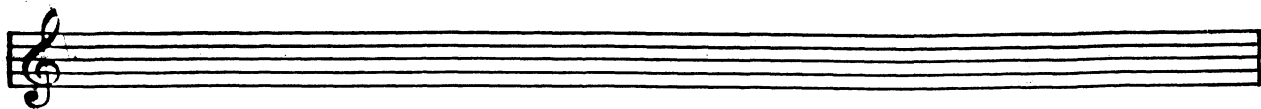


c minor

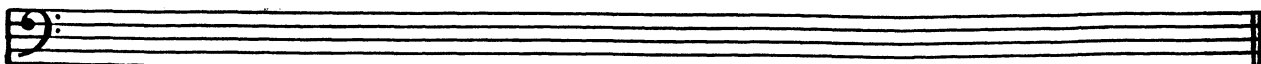


1. (cont'd) Melodic minor scales.

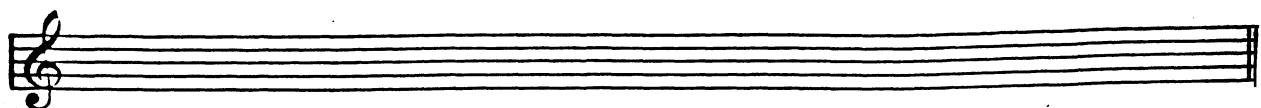
c# minor



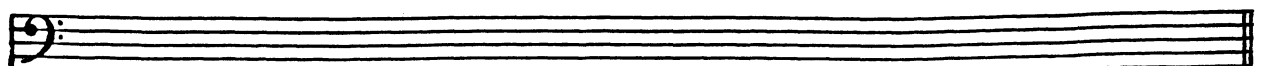
f minor



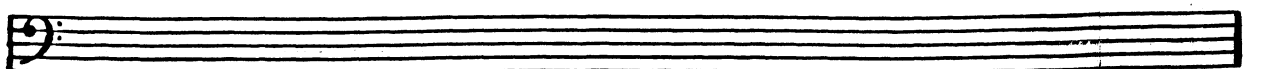
bb minor



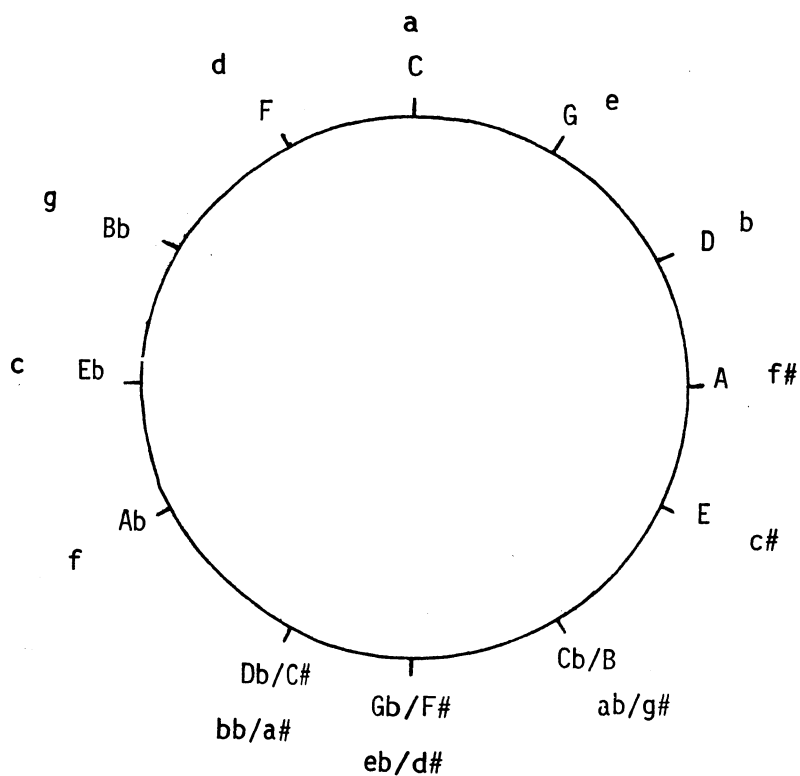
e minor



f# minor



Below is the diagram of the circle of fifths again, with the addition of the relative minor keys.



In the blanks provided, give first the major key and then the relative minor key for the following key signatures.

5 sharps	_____	_____
2 flats	_____	_____
3 sharps	_____	_____
1 flat	_____	_____
6 sharps	_____	_____
4 flats	_____	_____
2 sharps	_____	_____
5 flats	_____	_____
1 sharp	_____	_____
3 flats	_____	_____
4 sharps	_____	_____
6 flats	_____	_____
7 flats	_____	_____
7 sharps	_____	_____

The best way to figure these out (until they are memorized) is to learn to count by perfect 5ths. For example, for a major key with 6 sharps, count up from C-G, G-D, D-A, A-E, E-B, B-**F#**, and for a major key with 3 flats, count down from C-F, F-Bb, Bb-**Eb**. Then the relative minor is scale degree $\hat{6}$, or a minor 3rd down. There are other short cuts, but this method reinforces the order of keys constantly. Count up for sharps and down for flats. All major keys in flats have flat in their name except F which can easily be memorized. So to find the key signature of A major, it must be in sharps, so count up: C-G, G-D, D-**A** (3 sharps),

THINGS TO KNOW

1. Natural, harmonic and melodic minor scales
2. Relative minor keys of all major keys and vice versa
3. All major and minor key signatures

Suggestions for further study

1. Draw the circle of fifths and include the relative minor keys.
2. Construct natural, harmonic and melodic minor scales on every note.
3. Play these scales on the piano and learn to identify them by ear.

CHAPTER 5 - TRANSPOSITION

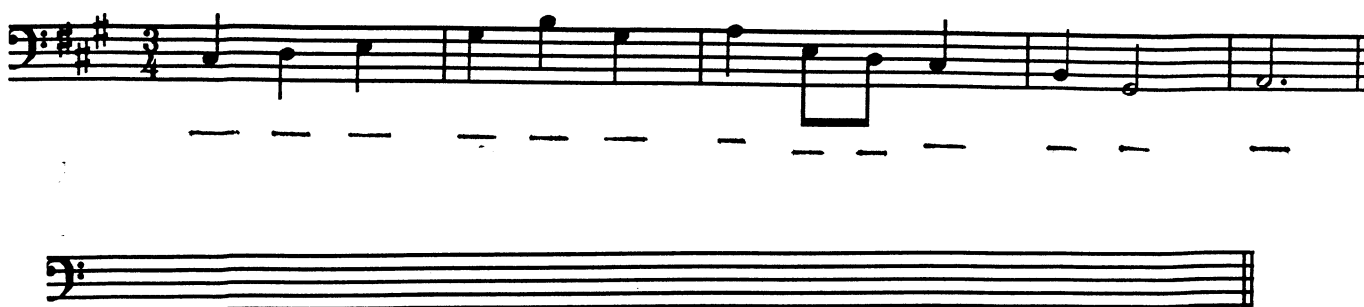
Transposing means shifting music to a higher or lower pitch. This will put the music into a different key, except when transposing by octave. Since many wind players play transposing instruments, it is a useful skill.

1. Re-write the following melody, transposing each note up a major 2nd.



Notice that the original melody was in F major, and the transposed melody is in G Major. Another way to transpose is to change to the appropriate key and use the same scale degrees.

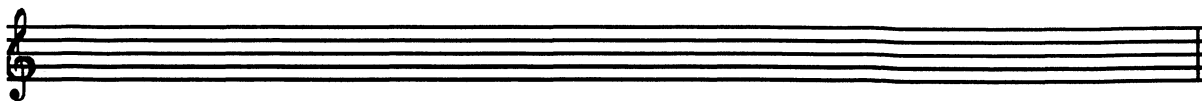
2. Below the given melody, write in the scale degree numbers. Transpose the melody down a minor 3rd by filling in the new key signature and using the scale degree numbers from the original to get the new notes.



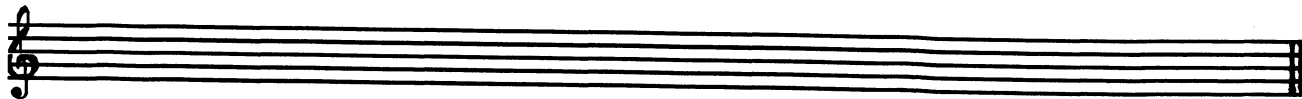
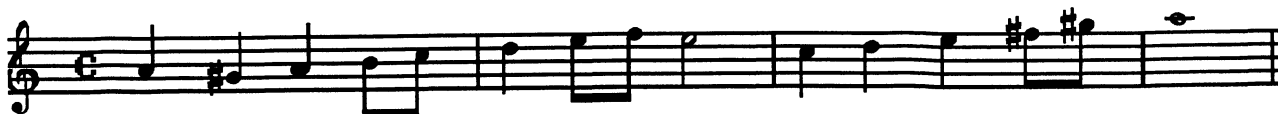
3. Transpose the following down an octave. The key will stay the same.



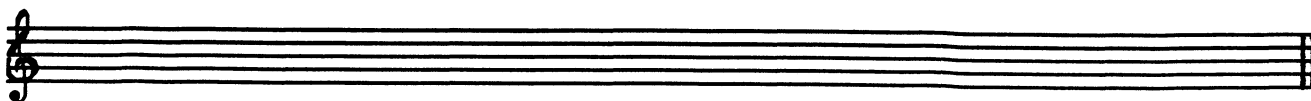
4. Label the key. Transpose this melody up a major 2nd and label the new key. (This would be done for a Bb clarinet part).



5. Label the key. Transpose this melody down a perfect 5th and label the new key.

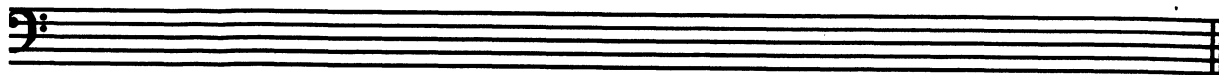


6. Label the key. Transpose this melody up a perfect 5th and label the new key (this would be done for a French Horn part).

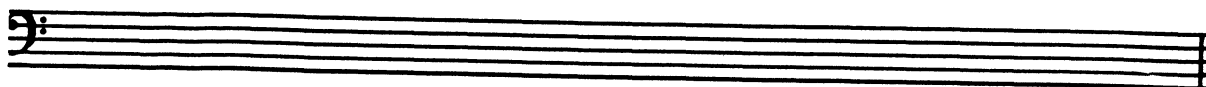


Sometimes a change of clef is needed when transposing. If a tune for trumpet was written out for trombone, for example.

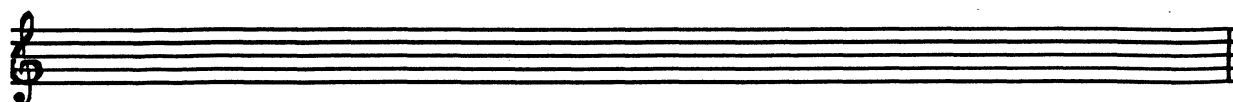
7. Transpose the following melody down an octave.



8. Label the key. Transpose this melody down a perfect 4th in bass clef and label the new key.



9. Label the key. Transpose this tune up a major 9th in the treble clef and label the new key (this would be done for a bass clarinet part or a tenor saxophone part).



THINGS TO KNOW

1. How to transpose up or down by any interval.
2. How to transpose by individual note, by key and/or by clef.

Suggestions for further study

1. Learn the transpositions for saxophones (Bb soprano, Eb alto, Bb tenor, Eb baritone), Bb soprano and bass clarinets, F horn and Bb trumpet. All these instruments sound lower than written.
2. Take a simple melody and transpose it for each of the above instruments.

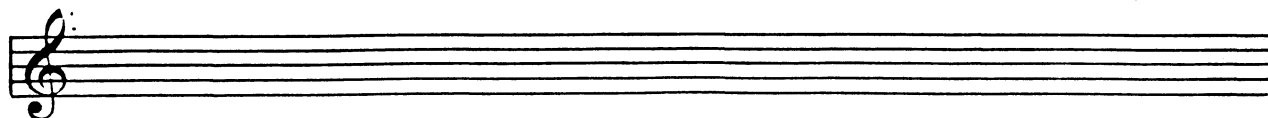
CHAPTER 6 - TRIADS

A **triad** is a three-note chord. The example below shows a major triad built on middle C. It is made up of scale degrees $\hat{1}$, $\hat{3}$ & $\hat{5}$. This is a tonic triad in **root position**. The bottom note is called the root, the middle note is the third, and the top note is the fifth (R,3,5).

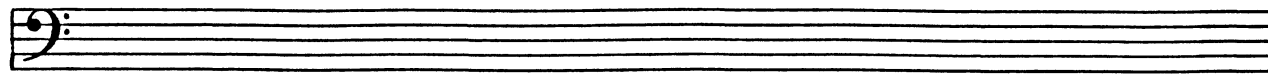


- Using key signatures, construct tonic triads in root position in the following major keys and label the notes (R,3,5). Make sure R is the tonic, 3 is the mediant, and 5 is the dominant, of the given key.

D Major F Major B $\flat$ Major D $\flat$ Major E Major G Major E $\flat$ Major



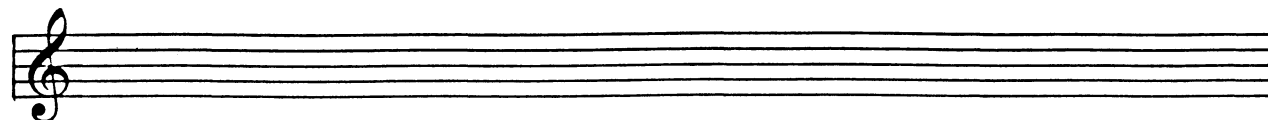
A $\flat$ Major B Major D Major C Major C $\sharp$ Major F Major E Major



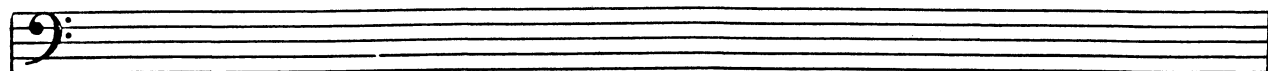
The above triads are called tonic triads because they are built on scale degree $\hat{1}$. Another common major triad is the dominant triad, built on scale degree $\hat{5}$, and consisting of scale degrees $\hat{5}$, $\hat{7}$ & $\hat{2}$ (dominant, leading tone, and supertonic).

- Using key signatures, construct dominant triads in root position in the following major keys. Label the notes (R,3,5) and make sure R is the dominant, 3 is the leading tone, and 5 is the supertonic of the given key.

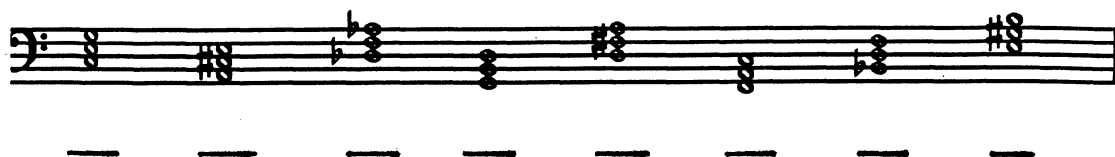
F Major D Major A Major B Major B $\flat$ Major F $\sharp$ Major C Major



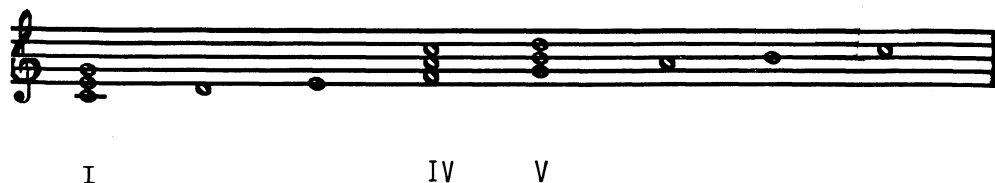
E Major A $\flat$ Major G Major D $\flat$ Major D Major A Major F Major



3. The following **are** dominant triads of what keys?

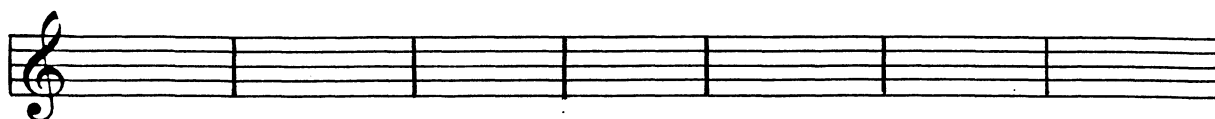


The tonic and dominant triads are the most commonly used, but triads can be built on any degree of the scale. The only other major triad built on a degree of the major scale is the subdominant triad, built on the fourth scale degree.

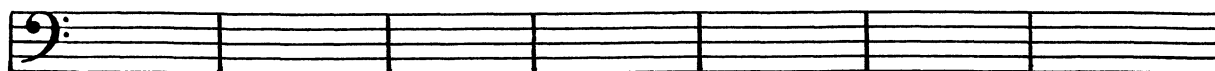


4. Construct subdominant triads in the following major keys using key signatures.

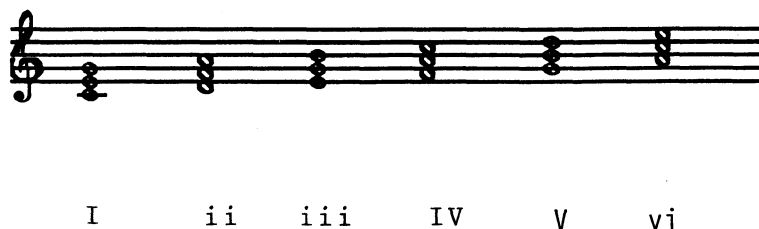
D Major Db Major C Major F Major Ab Major G Major E Major



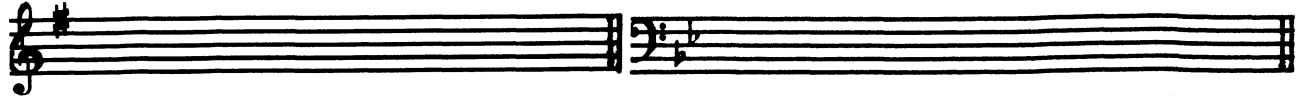
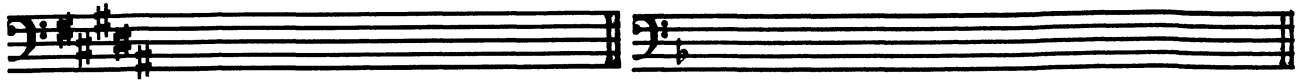
E Major Eb Major A major B Major D Major F Major C# Major



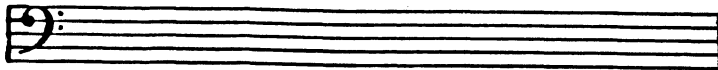
Notice that all these major triads consist of a major 3rd from root to third, and a perfect fifth from root to fifth. The **minor** triad consists of a minor third and perfect fifth. The diagram below shows the major and minor triads built on the degrees of the major scale with the appropriate Roman numerals (note the use of upper case for major triads and lower case for minor triads).



5. For each of these major key signatures, construct supertonic, mediant, and submediant triads. Label the major key and the chords.

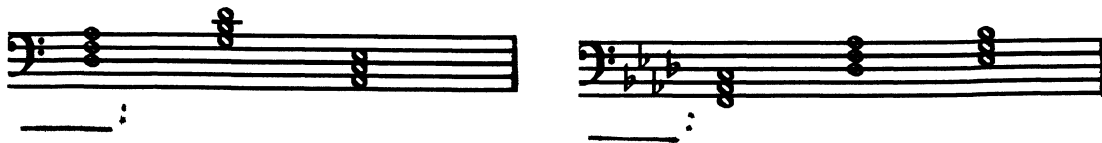


6. In bass clef in A Major, construct the following root position triads.



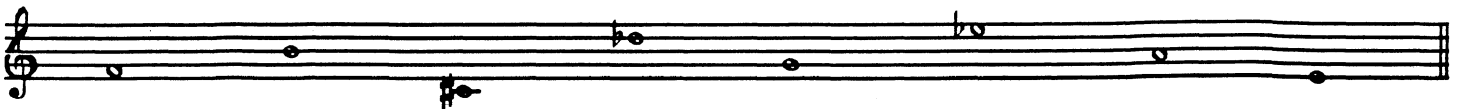
ii IV V vi I . iii

7. Identify the following triads by key and Roman numeral:

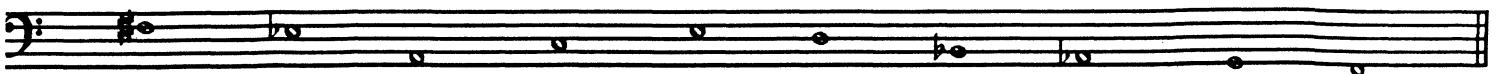


Major and minor triads can of course be constructed above any given note simply by writing a perfect fifth above and filling in a major or minor third (or major triad = M3 + m3, minor triad = m3 + M3).

8. Construct major triads above the given notes.



9. Construct minor triads above the given notes.

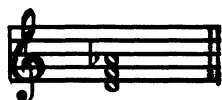


10. Identify the following triads as Major (M) or minor (m):



Besides major and minor triads, there are also diminished and augmented triads. The diminished triad consists of a minor third from root to third, and a diminished 5th from root to fifth (or two stacked minor thirds). The augmented triad consists of a major third from root to third and an augmented fifth from root to fifth (or two stacked major thirds).

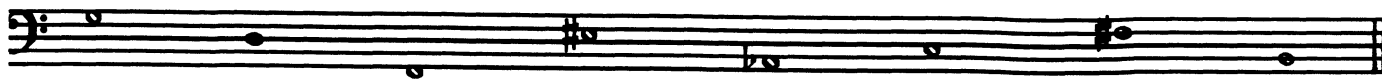
diminished



augmented



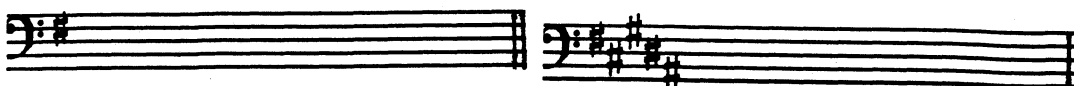
11. Construct diminished triads on the following notes.



12. Construct augmented triads on the following notes.

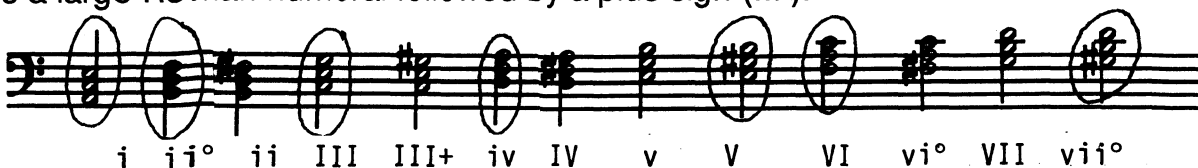


13. The leading tone triad is a diminished triad in a major key. For each of these major key signatures, write leading tone triads. Check to make sure they are diminished.



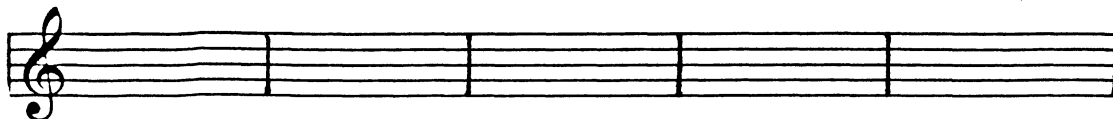
DIATONIC TRIADS IN MINOR KEYS

Diatonic triads are those found in major or minor keys. The triads built on the minor scale are shown below. There are two possible triads on each scale degree because of the raised 6th and 7th, but the ones circled are most common. The symbol for the diminished triad is a small Roman numeral with a small circle (vii°), and that for an augmented triad is a large Roman numeral followed by a plus sign (III^+).

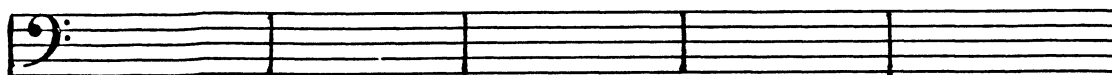


- Construct tonic (i) and dominant (V) triads for each of the following minor keys. Remember to use an accidental for the raised leading tone in the V chord.

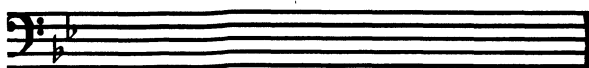
g minor f minor e minor d minor c minor



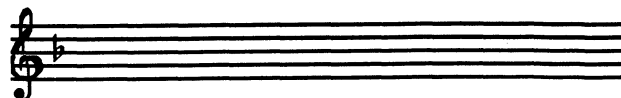
f# minor a minor c# minor eb minor bb minor



- Construct the following triads in the given minor key signatures and label the minor key.



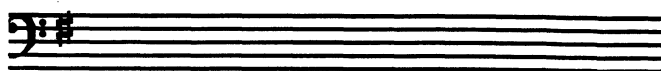
i iv VI V ii° vii°



V III ii° i iv VI



III VI V ii° i° vii°



iv i V III vii° VI

3. Supply Roman numerals for the chords below.

g minor



f# minor



c minor



a minor

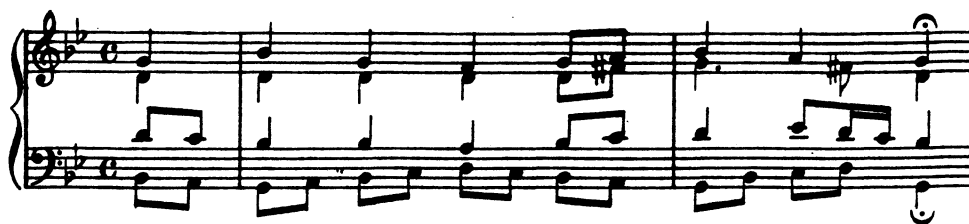


To decide what key a piece is in, look first at the key signature. Then look for accidentals which might be the raised 6th or 7th of a minor key, and look at the beginning and ending: many pieces start and end on a tonic chord.

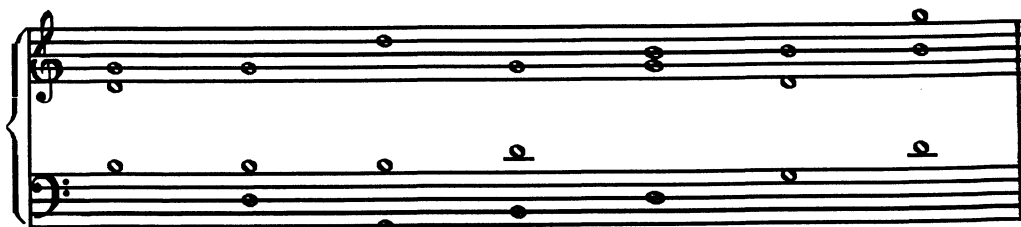
4. For the following excerpts, label the correct key in the blank.



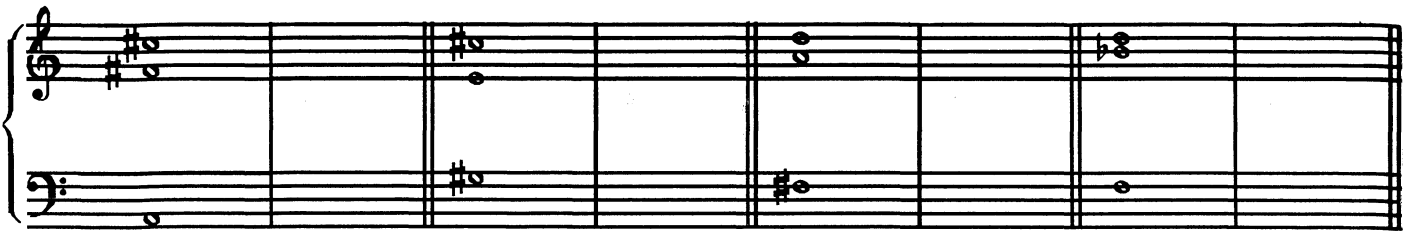




In order to analyse music, it is often necessary to rearrange a chord into root position (in stacked thirds with the root on the bottom). The following chords are all G major triads.



5. Rearrange the following chords into root position and label them underneath, using upper case letters for major and lower case for minor (For example: F = F major triad, g = g minor triad).



THINGS TO KNOW

1. Triads built on degrees of the major scale
2. The structure of major, minor, augmented and diminished triads
3. Triads built on degrees of the minor scale
4. The use of Roman numerals
5. How to determine the key of a piece of music
6. How to arrange triads into root position

Suggestions for further study

1. Build diatonic triads on each degree of several major scales and label them.
2. Build the most common diatonic triad on each degree of several minor scales and label them.
3. Arrange the chords of a hymn into root position and label them.

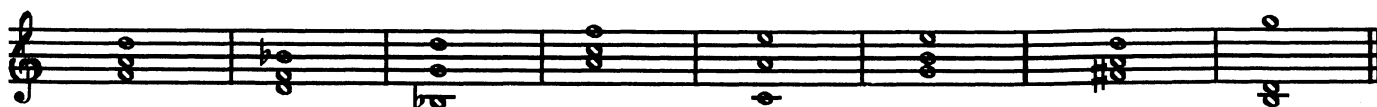
CHAPTER 7 - TRIADIC INVERSIONS AND FIGURED BASS

Some of the chords in previous exercises were in **first inversion** or **second inversion** before being arranged into root position. Below are D Major triads in root position, first inversion, and second inversion.



Notice that in first inversion the third of the chord is on the bottom, and in second inversion the fifth of the chord is on the bottom. The different inversions have different sounds, which should be learned.

1. Identify the following first inversion chords by capital or small letter name (you may want to arrange them in root position first):



2. Identify the following second inversion chords by letter name:



3. Identify the following chords by letter name and inversion (ie: G - Root, Eb - 1st):

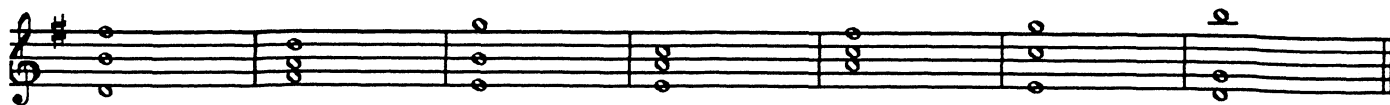


4. Identify the following chords in the given keys by Roman numeral and inversion (ie: IV - 1st):

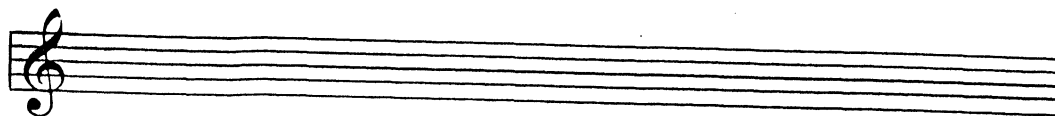
Bb Major



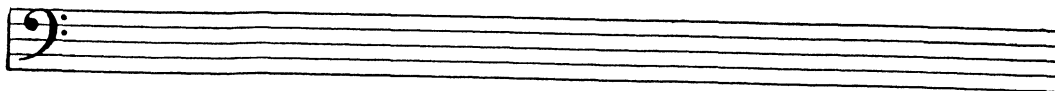
4. (cont'd)

G Major**g minor****f minor**

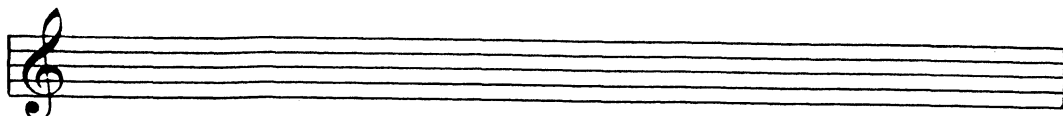
5. Construct the indicated triads in the given keys.

A Major

I-root V-2nd vii°-1st ii-1st vi-root V-root I-1st ii-1st

Eb Major

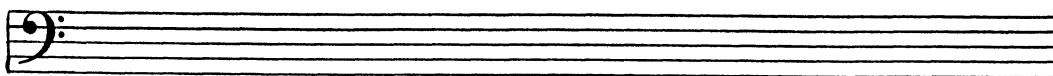
I-1st IV-2nd ii-1st V-2nd vii°-1st vi-root I-2nd iii-2nd

e minor

i-root V-2nd VI-1st ii°-1st iv-2nd i-1st III-root V-1st

5. (cont'd)

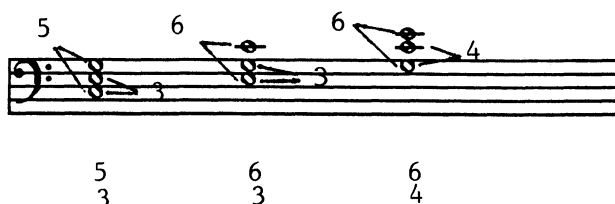
d minor



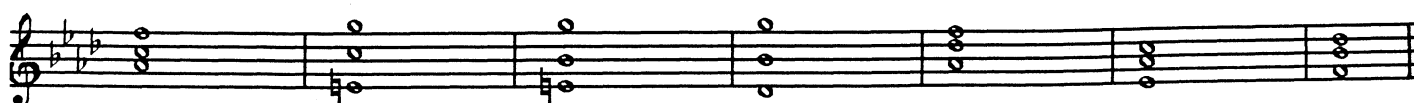
III-1st ii°-1st V-root iv-2nd VI-root i-2nd III-2nd V-1st

FIGURED BASS SYMBOLS

The intervals above the bass note are often given in arabic numbers called figured bass. This originated in the seventeenth century as a kind of shorthand for composers. The example below shows the figured bass and points out the intervals above the bass note from which these numbers come. The root position triad has a fifth and a third above the bass, the first inversion has a sixth and a third above the bass, and the second inversion has a sixth and a fourth above the bass. Remember the root stays the same no matter what inversion the chord is in (the root in this example is C).



- Write the figured bass for the following chords by examining the intervals above the lowest note of each. The larger number always goes above the smaller number. Compound intervals may have to be reduced.



2. Given the bass note and the figured bass, write in the other two notes of the chord. The notes follow what is already in the key signature unless otherwise indicated. So the numbers alone don't indicate the interval quality. For example, the first one below has a major third above the bass and the second one has a minor third.

5 3 6 3 6 3 6 3 6 4 6 3 6 4 6 4 6 3

3. Identify the following major triads and their inversions by capital letters and Arabic numerals. The capital letter will be the root of the chord and the Arabic numerals will identify the inversion.

4. Identify the following minor triads and their inversions by small letters and Arabic numerals.

5. Identify the following chords and their inversions by letter (capital for major, small for minor) and Arabic numerals.

6. Identify the following chords and their inversions in the given major keys by Roman and Arabic numerals. Remember that since the root doesn't change with inversion, neither does the Roman numeral.

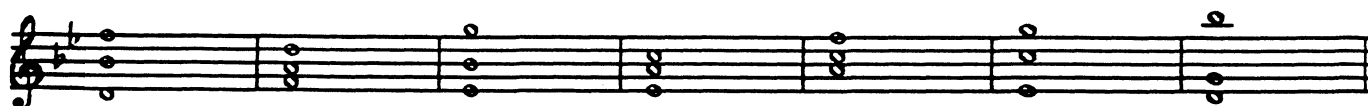
G Major

6. (cont'd)

A Major



Bb Major

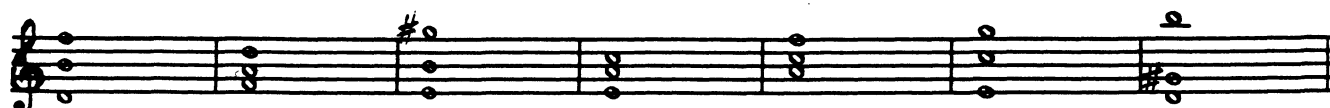


7. In the given minor keys, identify the following chords and their inversions by Roman and Arabic numerals (chord symbols).

e minor



a minor



d minor

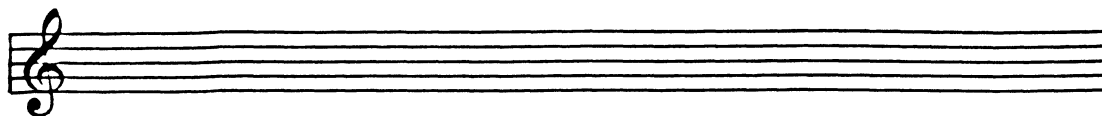


g minor



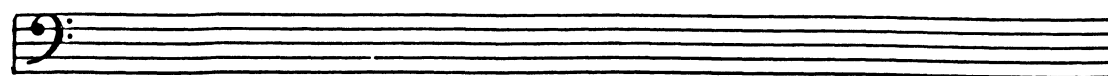
8. In the following major keys, construct the indicated chords.

C Major



vii°_3 V^5_3 I^6_3 iii^6_4 ii^6_3 vi^5_3 IV^6_4 I^6_4 ii^5_3 vii°_3 V^5_3

A Major



I^5_3 V^5_3 vi^5_3 iii^6_3 ii^6_4 IV^6_3 vi^6_3 I^6_4 V^6_4 ii^6_3 IV^5_3 V^5_3

THINGS TO KNOW

1. How to identify and construct 1st and 2nd inversion major, minor, augmented and diminished triads.
2. Figured bass symbols ($\begin{smallmatrix} 5 & 6 & 6 \\ 3 & 3 & 4 \end{smallmatrix}$).
3. Chord symbols (Roman and Arabic numerals together) for all diatonic triads in any inversion in any key.

Suggestions for further study

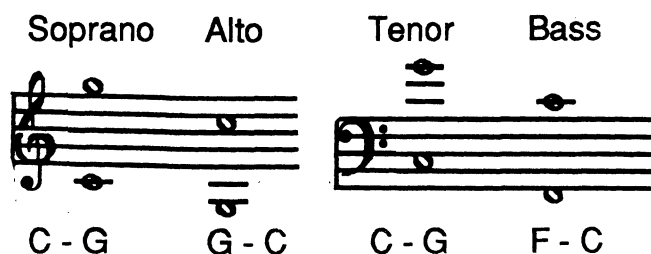
1. Make a small chart showing the structure of major, minor, augmented and diminished triads.
2. On each note of the chromatic scale, build a major triad and write it in 1st inversion.
3. Using accidentals, change these to minor triads.
4. Write these minor triads in 2nd inversion.
5. Construct diminished triads in root position on twelve different notes and state to which minor keys they belong (as vii° and as ii°).

CHAPTER 8 - CHORALE STYLE

Studying the chorale style of J. S. Bach is considered by most authorities to be the best foundation for an understanding of music theory. Below is a chorale harmonized by Bach. It is written for soprano, alto, tenor and bass, and the voices can easily be identified by the direction of the stems.



The standard voice ranges for choral singing are as follows:



Many trained singers exceed these ranges but for the average choir (or theory class) these are appropriate. These are easy to remember because they all involve G & C (except the bass which goes down to F).

1. In the example below, find any voices that are not in the correct range.



2. Analyse the following chords using chord symbols (Roman and Arabic numerals). They still only have three notes - one is doubled.

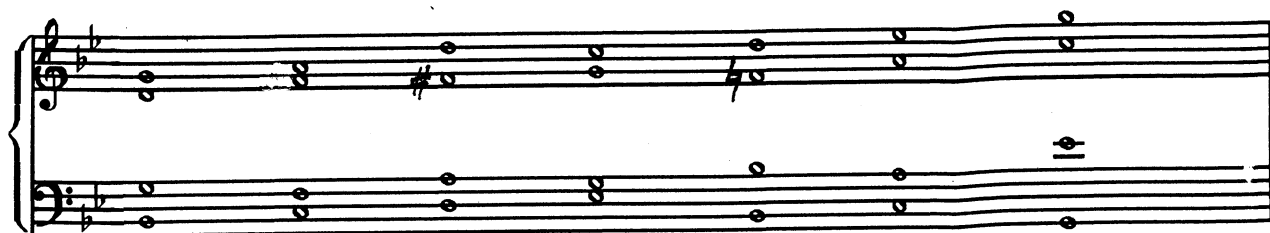
E $\flat$ Major



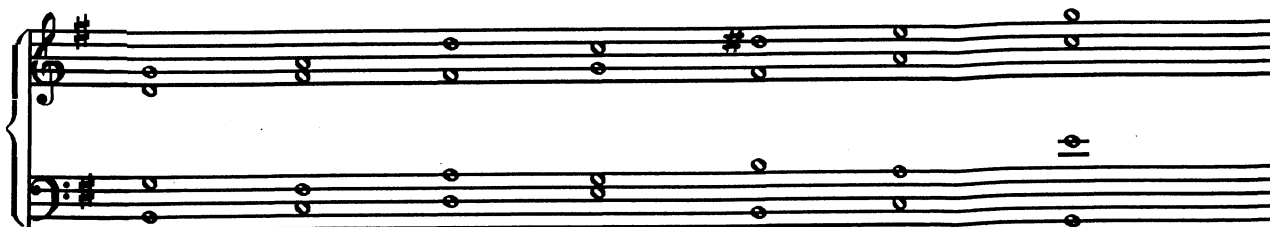
D Major



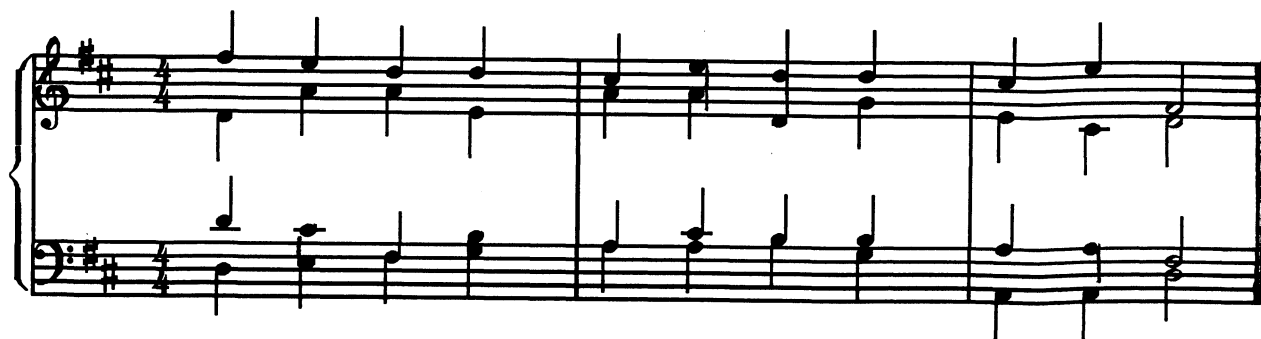
g minor



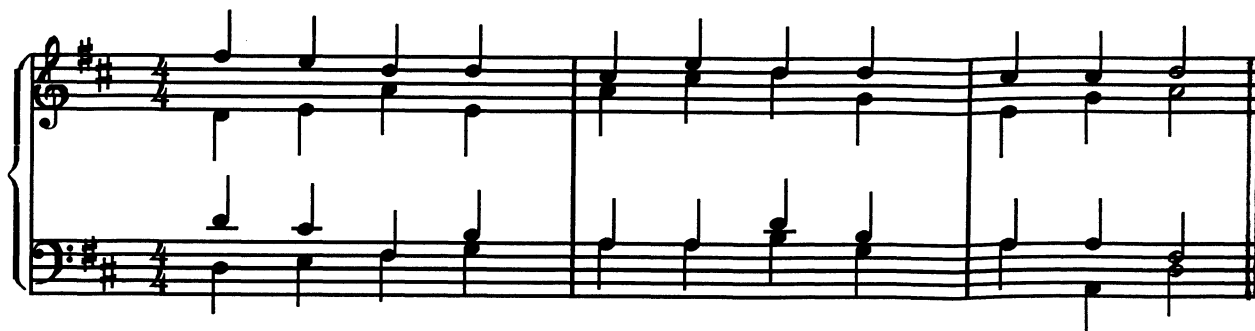
e minor



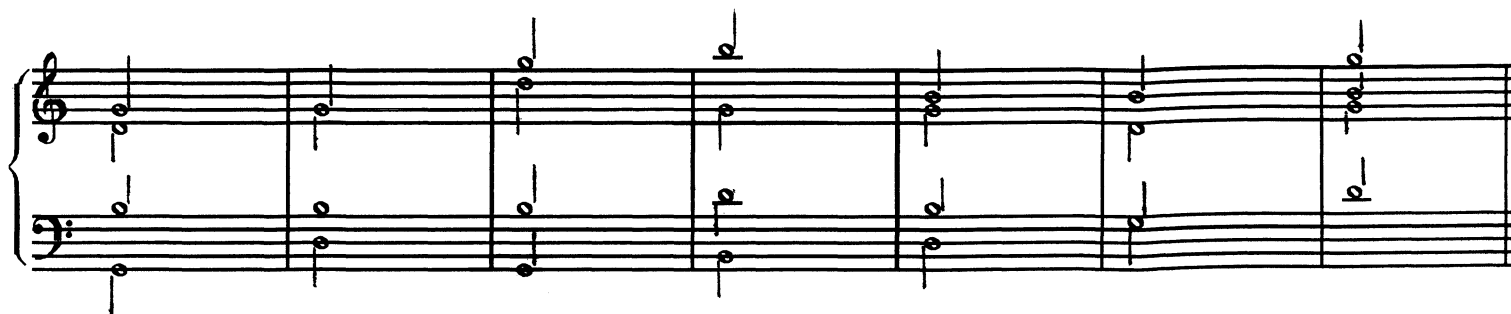
3. In the example below, circle the stems that are not going in the right direction. (soprano and tenor up, alto and bass down).



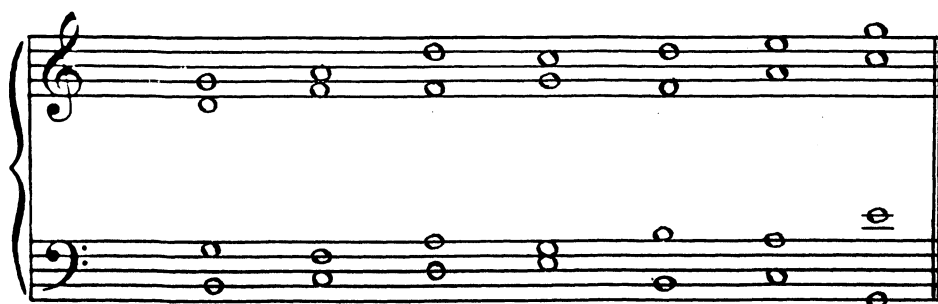
4. In this style, there should never be more than an octave between adjacent voices, with the exception of bass - tenor (ie: between soprano & alto or alto & tenor, the space should not be more than an octave). Find this error below, and indicate the voices involved in the blank.



5. In four-part writing, soprano and alto are always written in treble clef, and tenor and bass in bass clef. The following chords may contain one or more of the possible errors studied above. Re-write the chords in the spaces provided, correcting any errors.



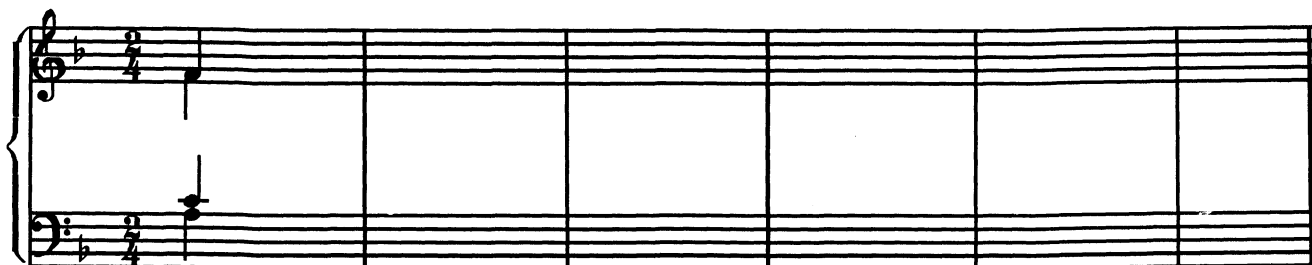
6. In the blank below each chord, state which member of the chord is doubled (R, 3 or 5).



Most often, the root of the chord is doubled, except in diminished chords, where the third of the chord is doubled. The fifth of a major or minor chord may be omitted, but never omit the third. The third of a major chord is not often doubled, and the leading tone is never doubled. The root may be tripled. Don't confuse the bass with the root - the root may be in the bass voice, or it may be in another voice.

7. Construct the following chords in chorale style, doubling the root, except in diminished chords (vii°) where you should double the third. It is a good idea to have the biggest space in the chord between the tenor and the bass, for a cleaner sound. If you play low notes close together on the piano, the result is a muddy sound. The same is true in chorale style if the tenor and bass are both low. Also, even though the voice ranges overlap, the voices should not cross (eg: the alto should not be higher than the soprano). A single note with two opposing stems indicates that the note is sung by two voice parts.

F Major



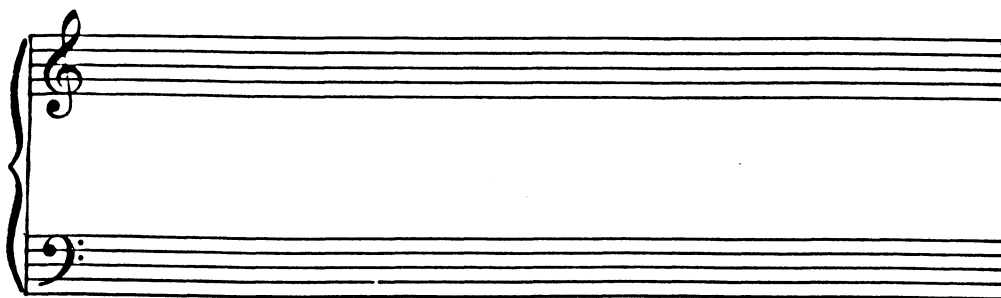
$\begin{smallmatrix} 6 \\ 1_3 \end{smallmatrix}$ $\begin{smallmatrix} 6 \\ vii_3 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ 1_3 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ ii_3 \end{smallmatrix}$ $\begin{smallmatrix} 6 \\ 1_3 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ V_3 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ vi_3 \end{smallmatrix}$ $\begin{smallmatrix} 6 \\ IV_3 \end{smallmatrix}$ $\begin{smallmatrix} 6 \\ ii_4 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ V_3 \end{smallmatrix}$ $\begin{smallmatrix} 5 \\ 1_3 \end{smallmatrix}$

The following are standard abbreviations for the figured bass symbols, which will be used from this point on (no Arabic numerals indicates root position, and 6 indicates first inversion): The full forms may also be used.

(nothing) = $\begin{smallmatrix} 5 \\ 3 \end{smallmatrix}$ 6 = $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$ No abbreviation for $\begin{smallmatrix} 6 \\ 4 \end{smallmatrix}$

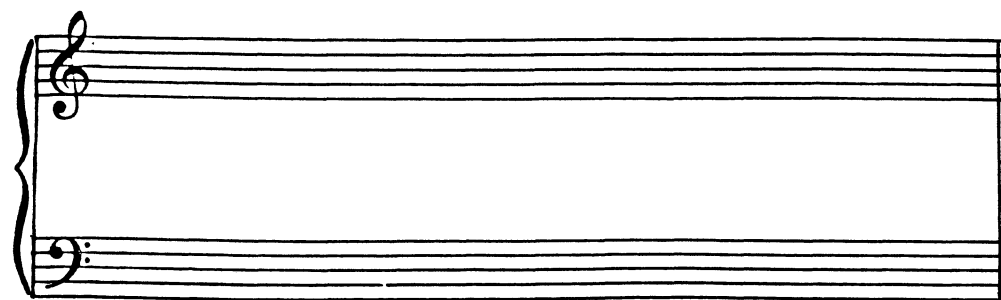
8. Construct the following chords in chorale style.

B $\flat$ Major



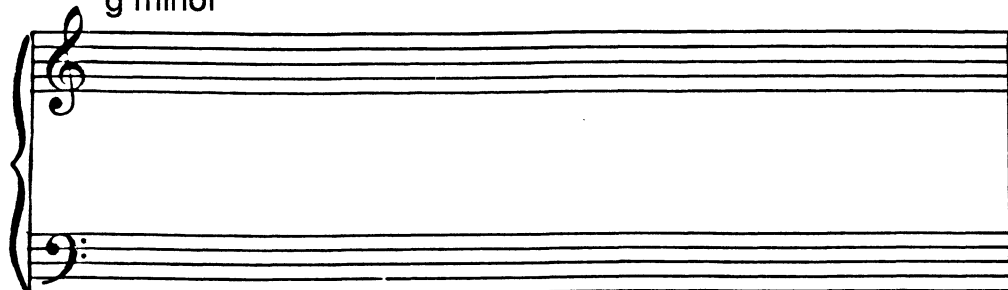
I V⁶ ii $\frac{6}{4}$ V vii^{o6} vi ii⁶ IV $\frac{6}{4}$ I⁶ vi⁶

D Major



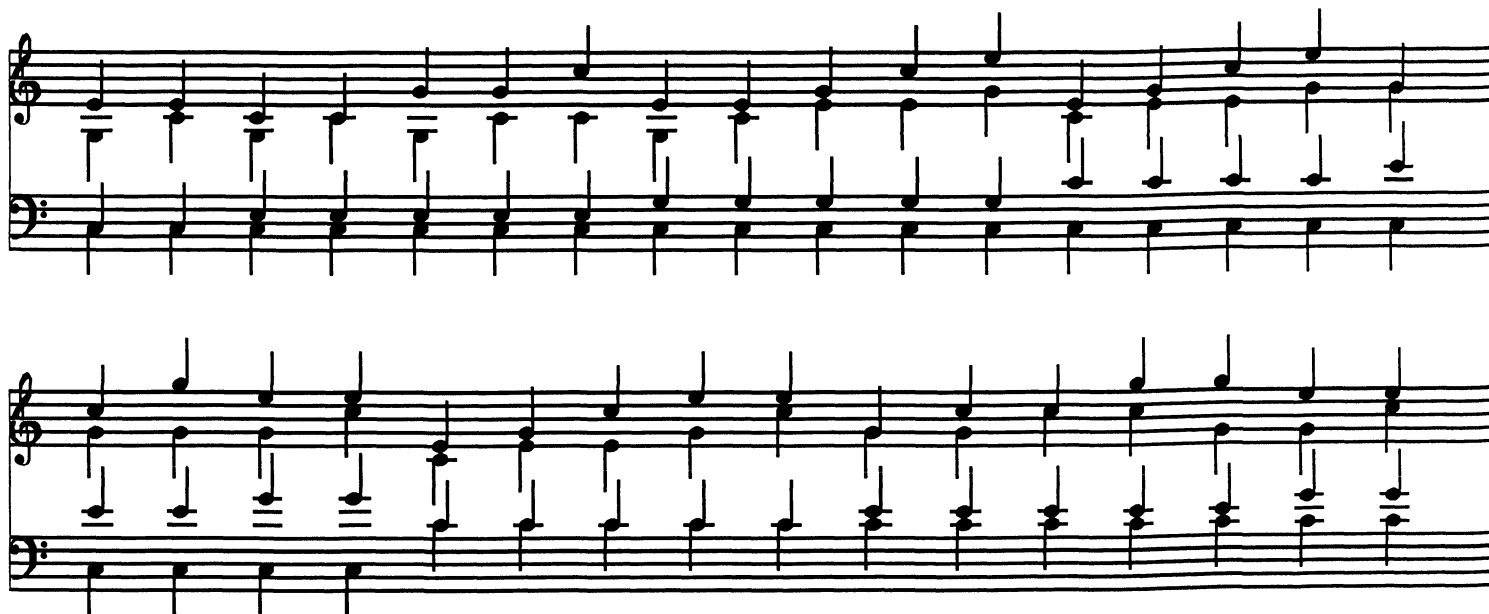
I⁶ vi ii⁶ V⁶ vi $\frac{6}{4}$ IV ii V I $\frac{6}{4}$

g minor



i vii^{o6} III ii^{o6} V⁶ VI iv $\frac{6}{4}$ V i⁶

There are many different ways to arrange any given chord. The example below shows 33 different voicings of a C major chord.



Two categories of voicings are standard. In **closed spacing** there is no space between the upper three voices (SAT), so that no other chord member can be inserted between soprano and alto, or alto and tenor. In **open spacing**, there is room for another chord member both between soprano and alto, and alto and tenor. See examples below.



Closed



Open

9. Identify the following chords as open or closed spacings.



The study of closed and open spacings is merely a way of experimenting with the different voicing possibilities. It is a good idea to learn how these affect the sound of the chords. Familiarity with the different possibilities will also allow for better voice leading in chorale writing and harmonization of melodies.

THINGS TO KNOW

1. Stem directions
2. Voice ranges
3. Common errors
 - doubled leading tone
 - voice crossing
 - 3rd omitted
 - space > 8ve between SA or AT
 - 3rd of diminished triad not doubled
4. Figured bass symbols:
5. Closed and open spacing

Suggestions for further study

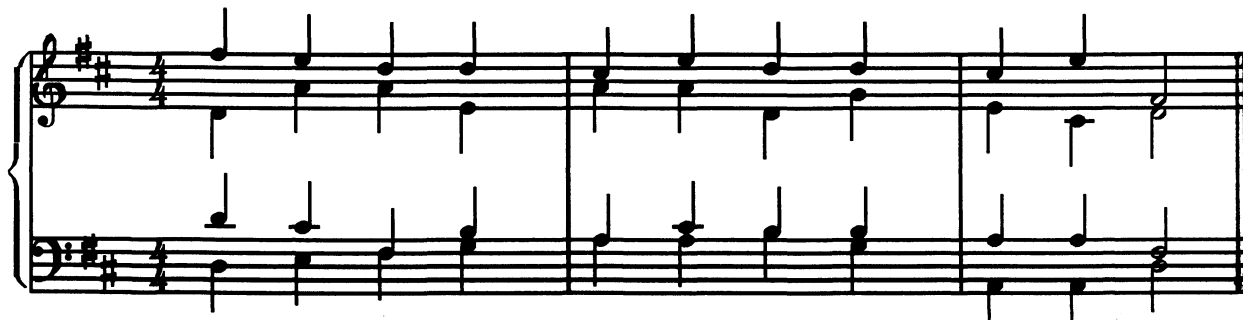
1. Write out the diatonic triads of all major keys for S.A.T.B.
2. Write out all diatonic triads for all minor keys and circle the ones most commonly used.
3. Analyse the chords in some church hymns.

CHAPTER 9 - VOICE LEADING

Voice leading refers both to the melodic movement of a single voice and to the combined movement of two or more voices. A single melody usually consists of steps and leaps. A **step** is an interval of a 2nd, and a **leap** is an interval of a 3rd or more. All voices in a chorale should be easy to sing, and there are several guidelines to follow which will help.

- Leaps of a fifth or more are avoided in the alto and tenor voices.
- In the soprano or bass, fifths, sixths, occasional sevenths, and octaves are permissible, but of these large intervals, octaves and fifths are most easily sung.
- Generally a good balance of steps and leaps in the soprano and bass, and more stepwise motion in the alto and tenor, produces the best results.

1. Examine each line of the chorale below and circle the melodic errors.



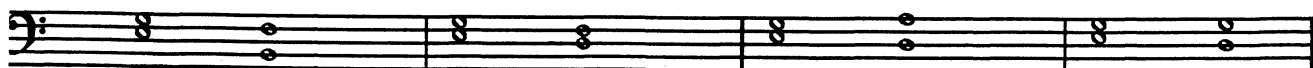
The combined movement of two voices can be described as:

similar motion: both voices moving in the same direction

parallel motion: both voices moving in the same direction by the same interval

contrary motion: voices moving in opposite directions

oblique motion: one voice is stationary, the other moves



similar

parallel

contrary

oblique

2. Given the soprano and alto lines below, label the type of motion in the blanks between the chords.



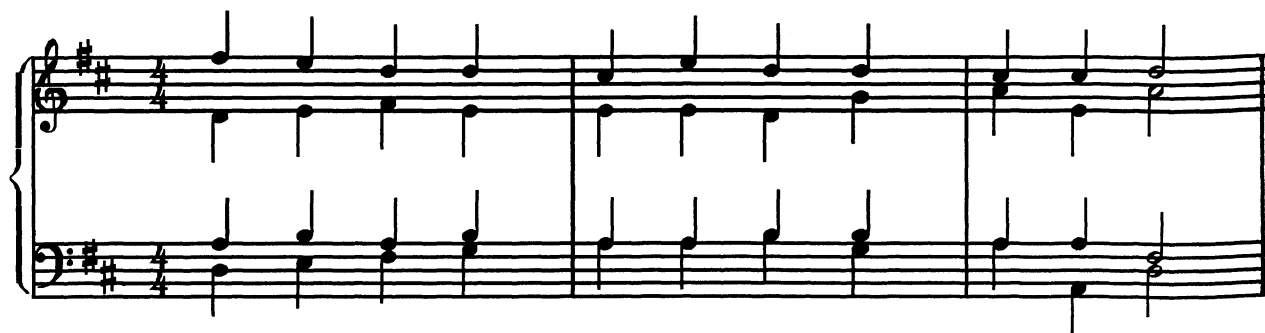
Because one of the basic requirements of chorale style is that each line be independent, contrary motion is usually best. Parallel motion often causes the lines to sound locked together instead of independent, especially in the case of parallel perfect 5ths and 8ves. Below are examples of parallel 3rds, 5ths, 6ths and 8ves, the sounds of which should be learned.



Parallel 3rds and 6ths are quite pleasing to the ear and are fine in chorale style, but:

Parallel perfect 8ves or 5ths are **not** a part of chorale style.

3. Mark any parallel 8ves or 5ths that are present in the chorale below. Parallel 8ves and 5ths include their multiples, so a 12th is considered a fifth, and a double octave or a unison is considered an octave. The motion however, must be parallel to be considered parallel 8ves.



Note: A repetition of the same octave or fifth is not considered parallel.

4. Mark the parallel perfect 8ves or 5ths.

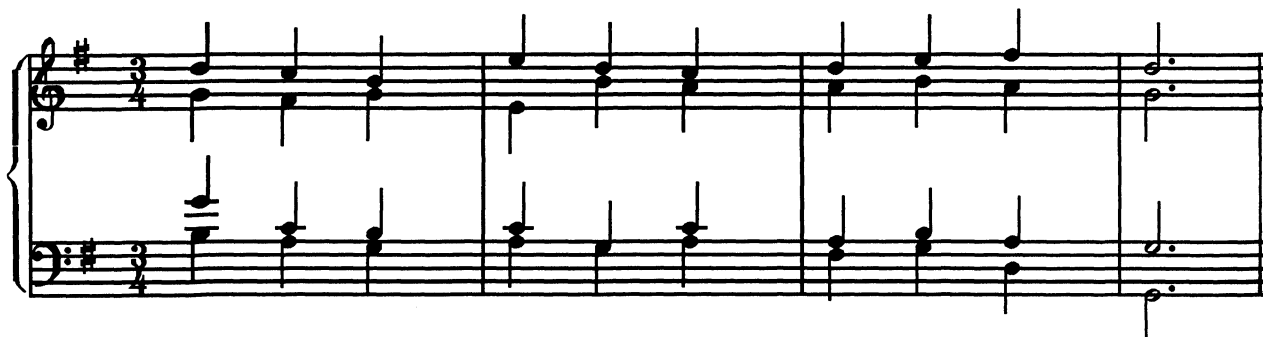
OVERLAP

Overlapping of parts between adjacent chords, as shown in examples (a) and (b) below, should be avoided. It interferes with the smooth flow of the individual parts. In (a), the tenor in the first chord is lower than the bass of the next, and in (b), the alto of the first chord is higher than the soprano of the next. There is no overlap in (c) because the second soprano note does not fall below the previous alto note.

C: I V IV V I V

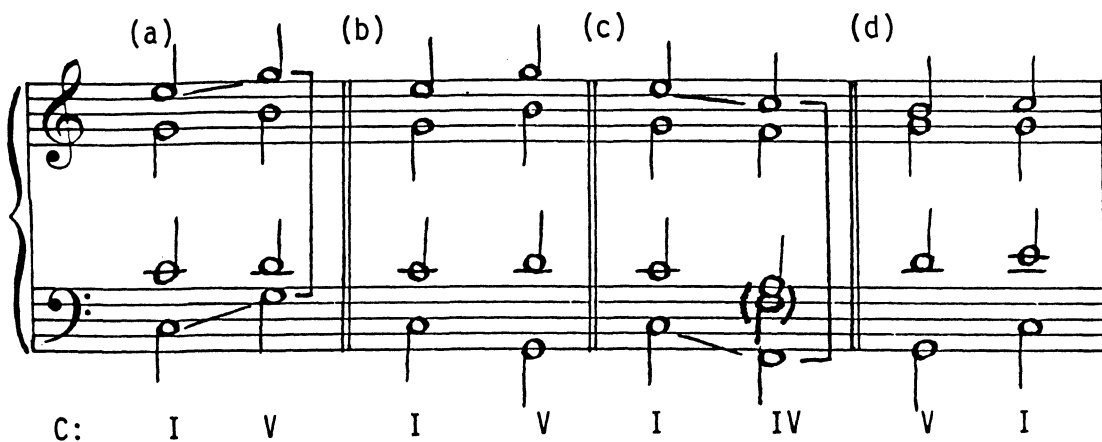
1. Draw arrows to indicate overlap errors in the chorale below.

2. The leading tone must resolve to the tonic. Identify voice-leading errors in the chorale below (parallel 5ths and 8ves, overlap, awkward leaps, missing third, unresolved leading tone, and spacing).



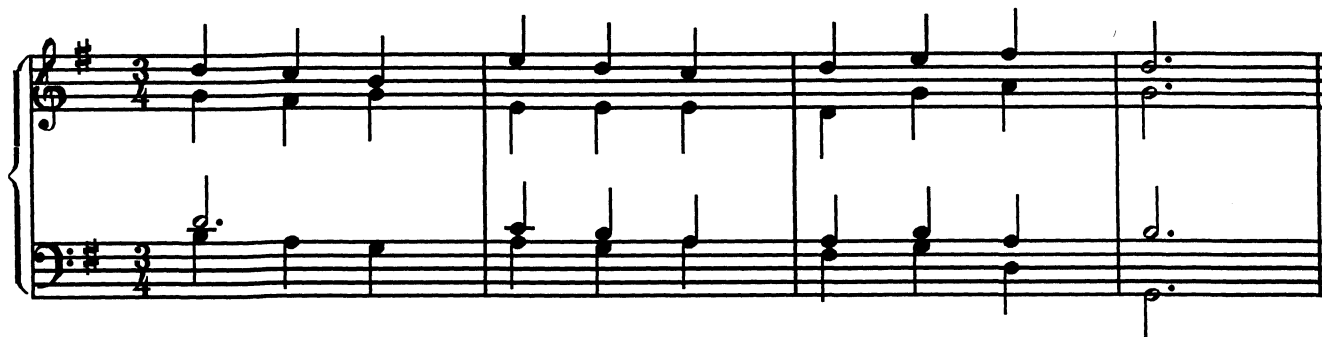
EXPOSED 5THS AND 8VES

If the outside parts (S and B) move in similar motion to form an octave or a perfect fifth, the soprano should move by step. If the soprano moves by leap in this context, the open sound of the fifth or octave is over-emphasized, and this fault is called an exposed fifth or octave. The easiest way to eliminate the fault is by moving one of the bass notes up or down an octave, to produce contrary motion with the soprano, as follows:

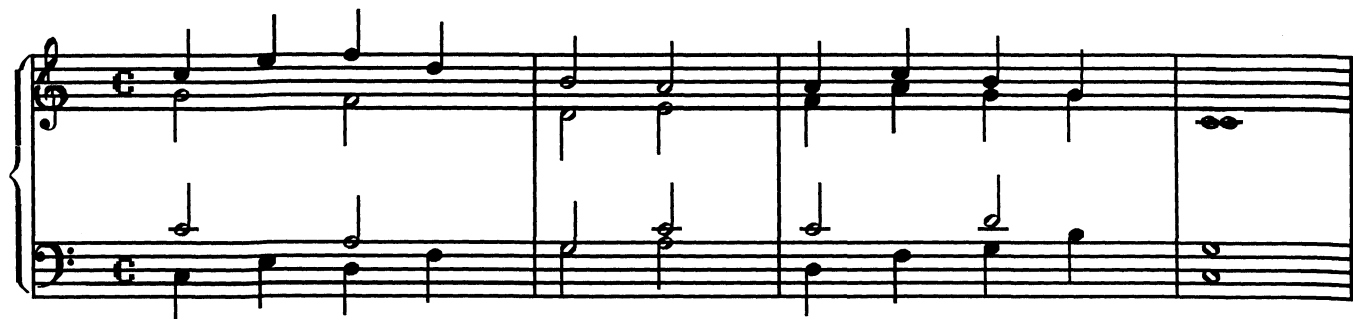


The exposed octave in (a) can be removed by allowing the bass to drop to low G, producing contrary motion (b). The exposed perfect fifth in (c) is similarly corrected by having the bass rise to the higher F (shown in brackets). In (d) there is no problem because the soprano moves by step.

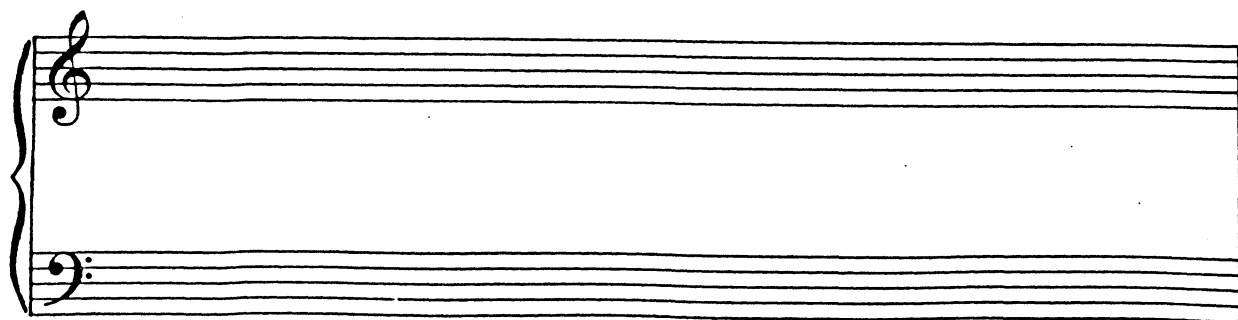
1. Find the exposed 8ves and 5ths in the chorale below.



2. In the chorale below, indicate the errors and write a corrected version.
You may have to make some significant changes.



Corrected version



THINGS TO KNOW

1. Melodic steps and leaps for S.A.T.B.
2. Similar, parallel, contrary and oblique motion
3. Common errors:
 - parallel P8ves & P5ths
 - overlap
 - voice crossing
 - unresolved leading tone
 - exposed P8ves & P5ths

Suggestions for further study

1. Write several chorale melodies for soprano voice.
2. Examine some baroque choral music. There are several exceptions to some of the rules, especially voice crossing, but they require advanced compositional technique.

CHAPTER 10- CADENCES

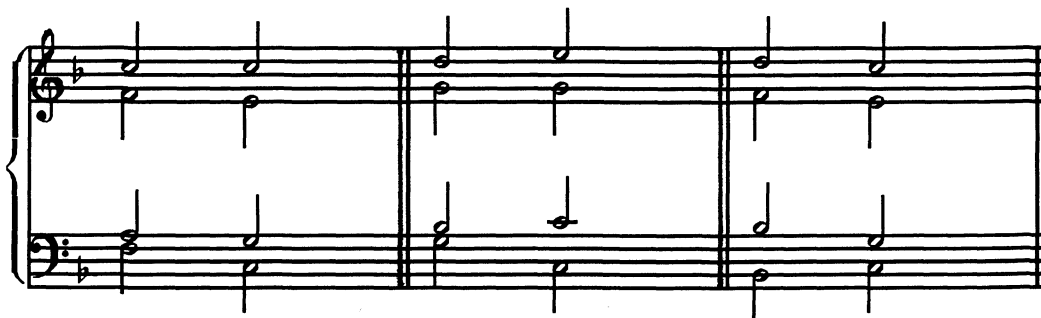
Cadences are musical punctuation. They are placed at the end of a musical phrase or sentence, just the way commas and periods are used in written language. A cadence is a progression of two chords which creates a feeling of rest.

The **authentic cadence** (V-I) conveys the greatest sense of finality and it is used at the end in most pieces. The example below includes several different voicings of the authentic cadence, all of which resolve the leading tone to the tonic. Notice that the ones that end with the tonic in the soprano sound more final. These are called **perfect authentic cadences**.



C: V I V I V I V I

The **half cadence** (ii-V, I-V, IV-V) is so named because it ends on the dominant and doesn't sound finished. It is used like a comma, and cannot be used for a final phrase.



F: I V ii V IV V

The **plagal cadence** (IV-I) is often used after an authentic cadence, like a tiny "coda", to emphasize the feeling of repose at the end of a piece. A common example is the Amen following a hymn (the plagal cadence is sometimes called the Amen cadence). Here is the final phrase of the 16th-century hymn tune "St. Michael":

G: I V I⁶ IV [V I] [IV I] Plagal

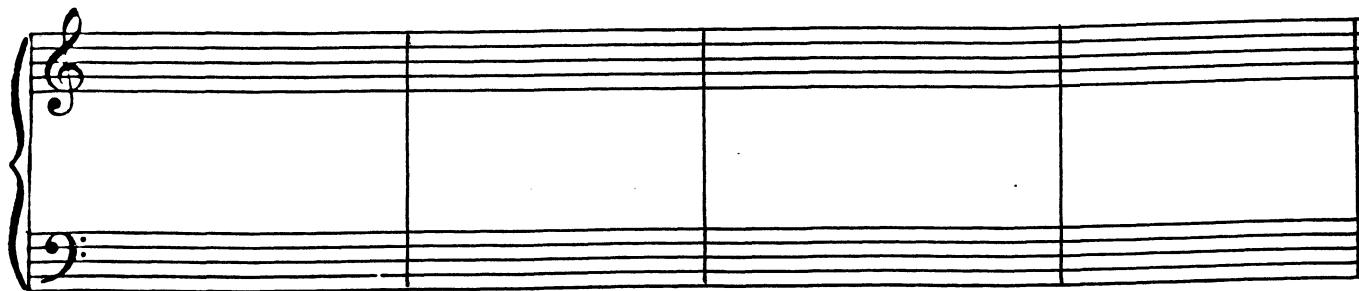
The **deceptive cadence** (V-vi) is used in place of an authentic cadence to avoid the sense of finality, and is extremely well named. The ear expects to hear a tonic chord but instead hears a submediant chord. This is often used to delay the arrival of the final tonic chord.

F: V vi V vi

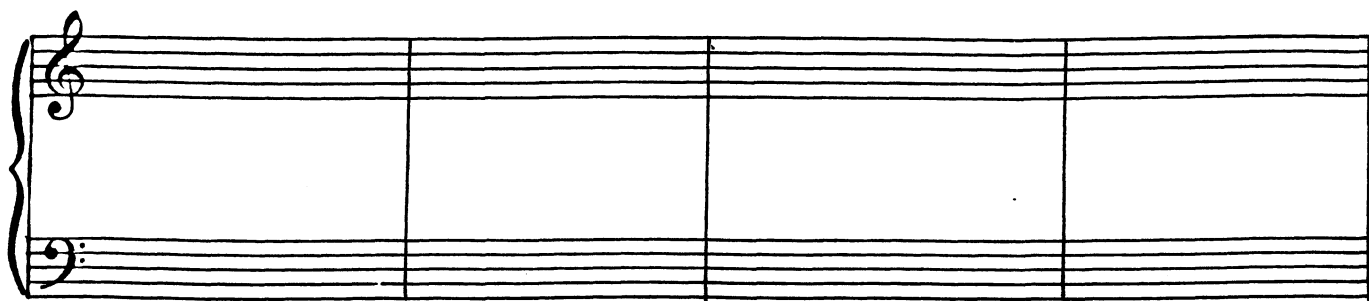
1. Label the cadences below:

2. Write four different voicings of the authentic cadence in the following keys. Keep the common tone in the same voice and resolve the leading tone ($\hat{7}$ - $\hat{8}$).

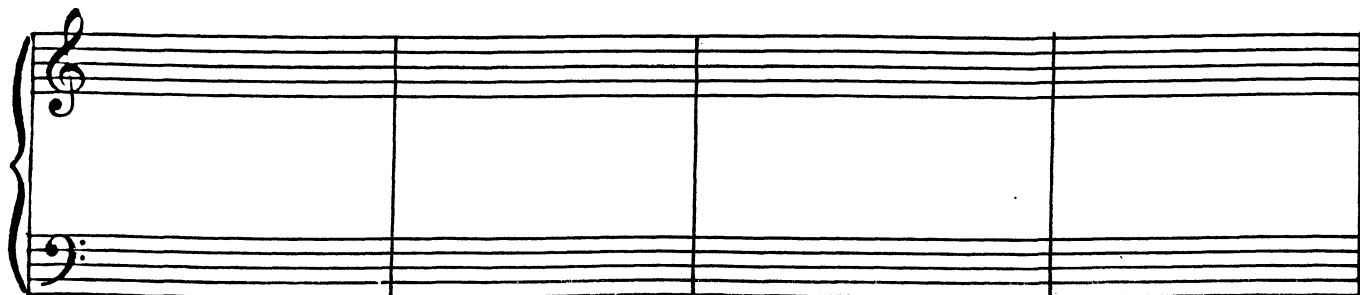
Bb Major



G Major

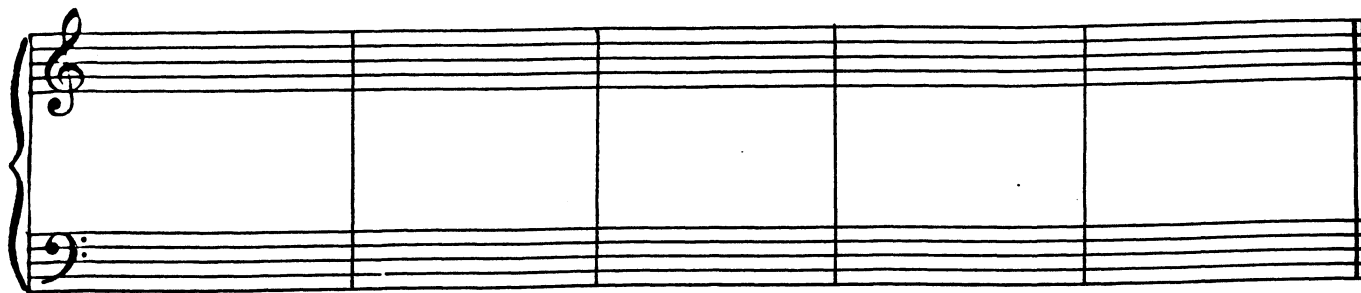


a minor (raise the leading tone **and** resolve it)

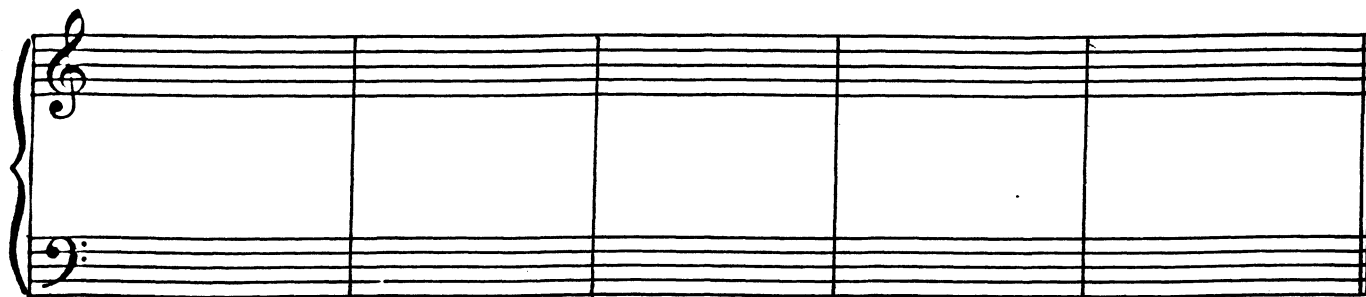


3. Write five different half cadences for each of the given keys. When going from IV-V the bass should rise and the other three parts should fall, to avoid parallel fifths.

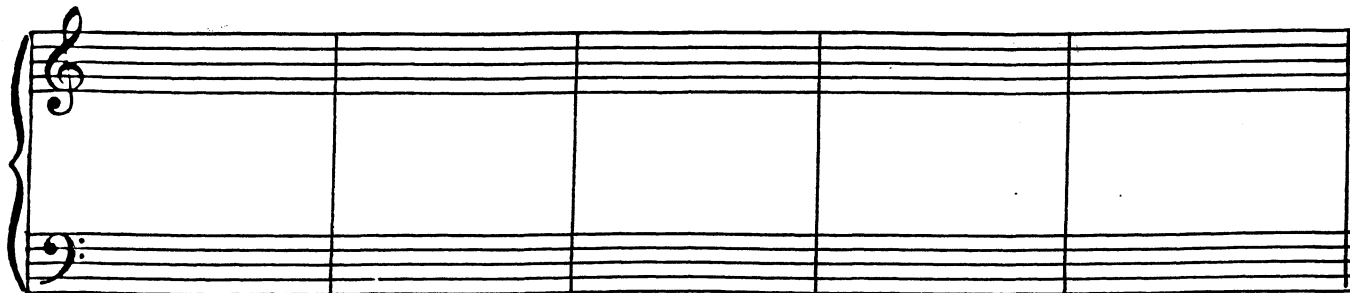
C major



F Major

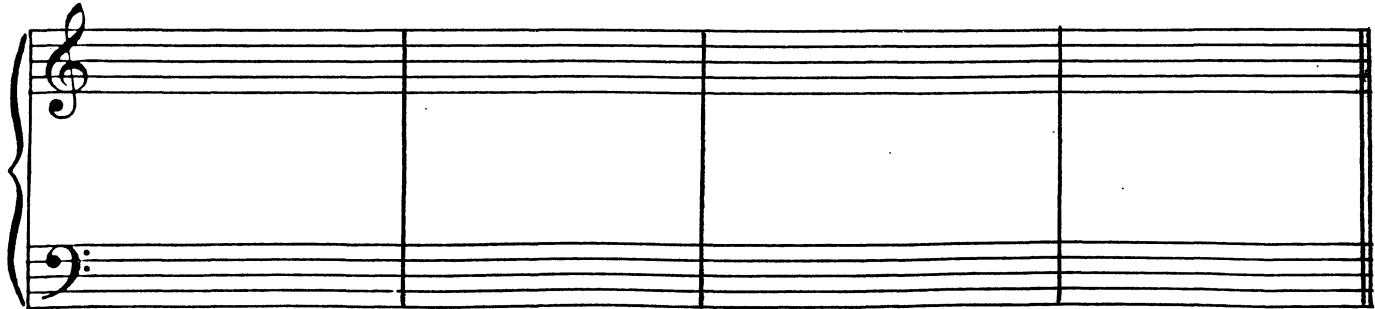


Db Major

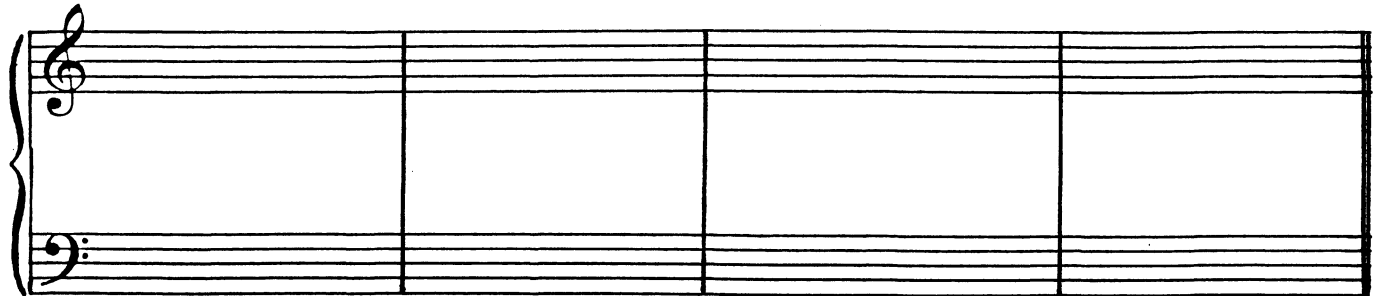


4. Write four different voicings of the plagal cadence in the given keys.

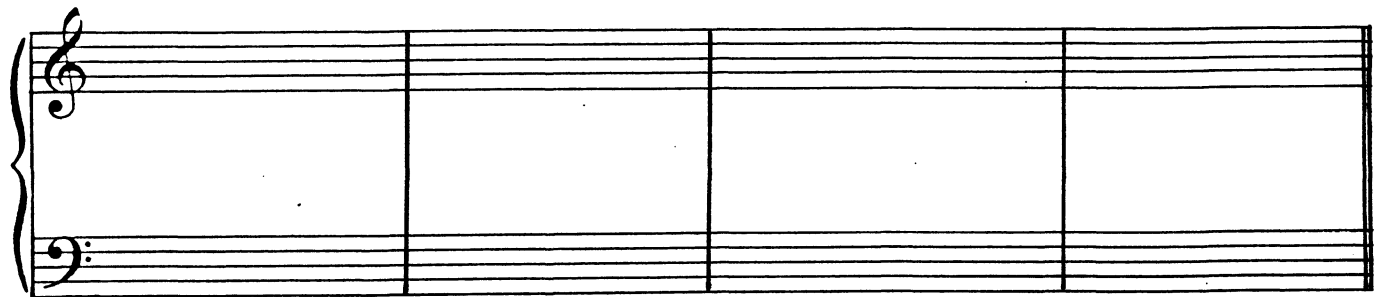
D Major



E major

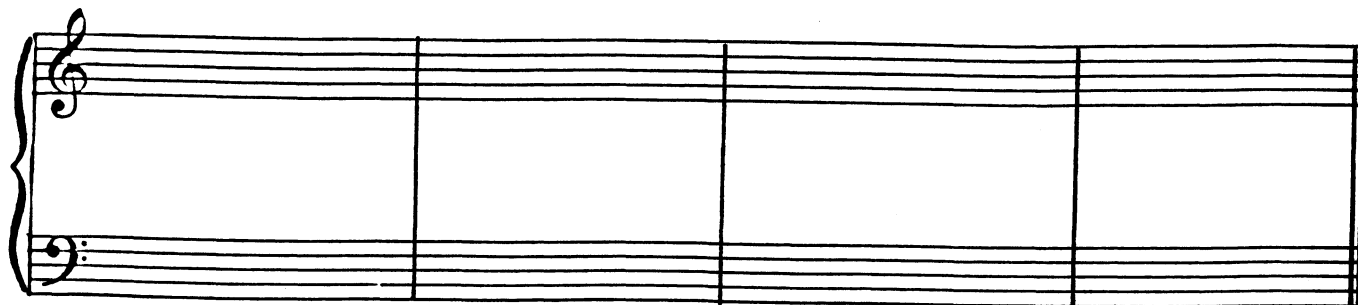


e minor (use minor iv)

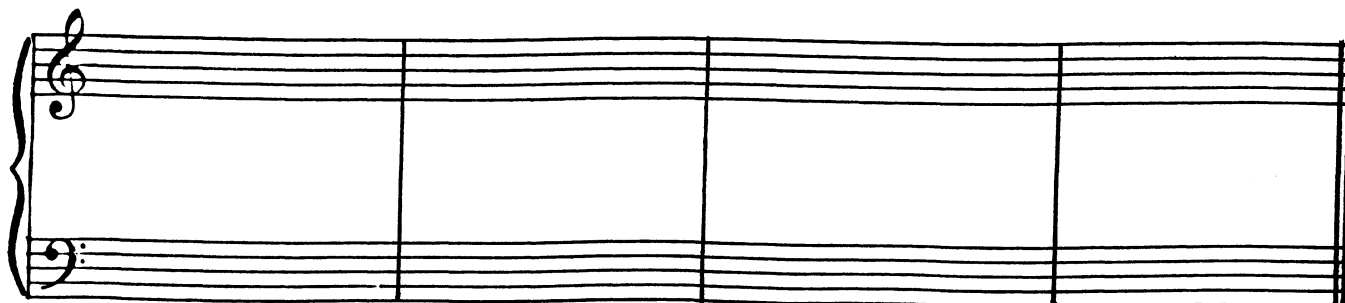


5. Write four voicings of the deceptive cadence in each of the given keys.
The best way to avoid parallels is to have 2 voices rise and 2 voices fall, doubling the 3rd of the vi chord. The leading tone will still resolve properly to the tonic.

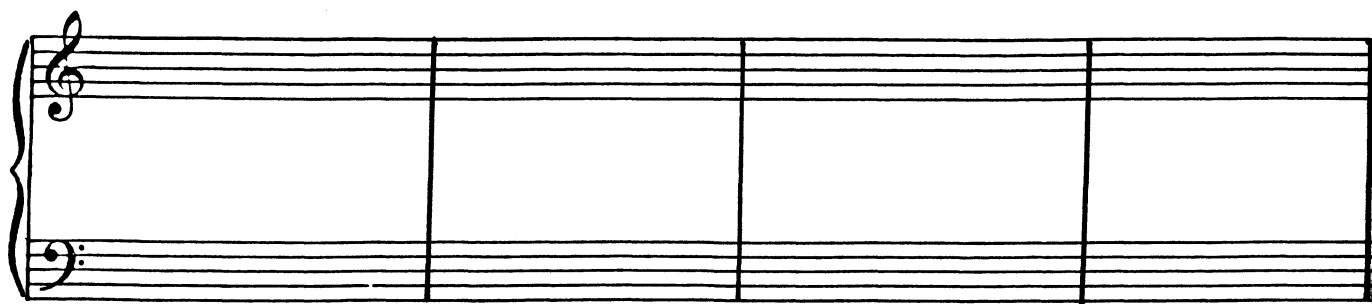
A Major



c minor (VI will be major)



f minor



THINGS TO KNOW

1. Authentic, half, plagal and deceptive cadences.
2. The use of the common tone.
3. The fifth of the chord may be omitted.
4. The leading tone should resolve to the tonic.

Suggestions for further study

1. Play all the cadences on the piano and learn their sounds.
2. Analyse the cadences in church hymns (or any classical or baroque music).
3. Practice writing cadences in all keys.

CHAPTER 11 - DOMINANT SEVENTHS

The most useful four-note chord is the **dominant seventh chord (V)**. A seventh chord is any four-note chord built up from the root in thirds, and this particular one has the dominant as the root. Its chord members are root, third, fifth, and seventh. The example below shows the dominant seventh chord of C major in root position.

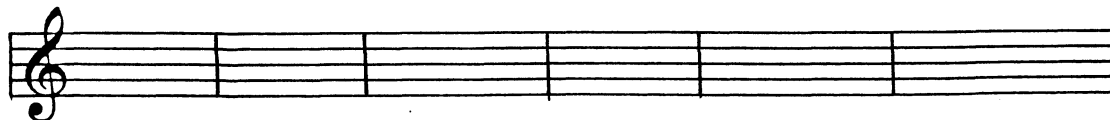


This is also the dominant seventh chord of c minor, since the leading tone is raised from Bb to B.

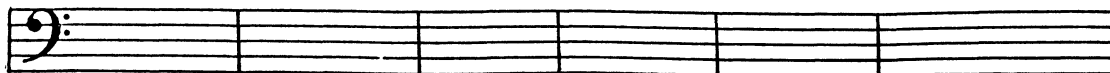


1. Write the dominant seventh chords in root position of the following keys. Use key signatures.

D Major F Major Ab Major A Major Eb Major E Major

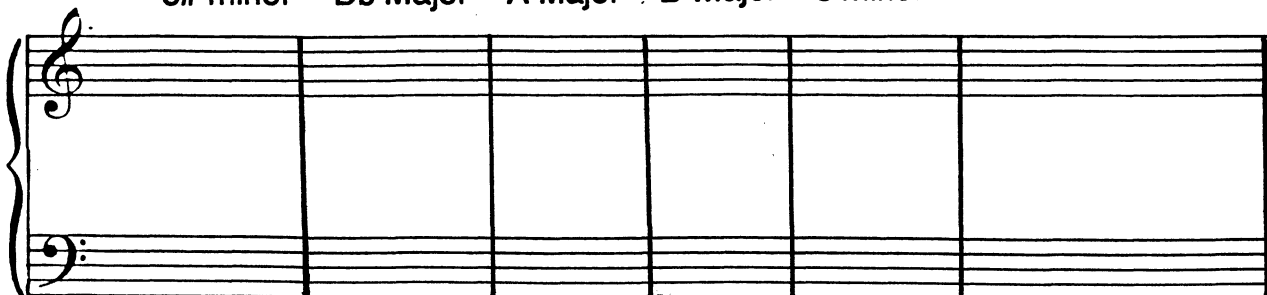


f# minor bb minor b minor e minor d minor g minor



2. For S.A.T.B., write dominant seventh chords in root position for:

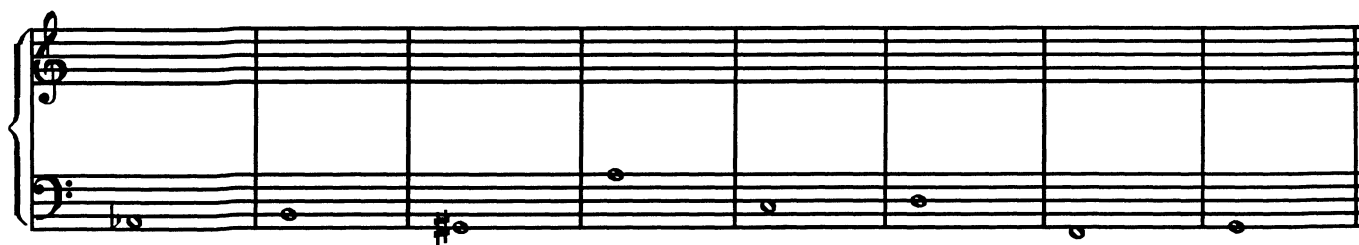
c# minor Db Major A Major B Major c minor eb minor



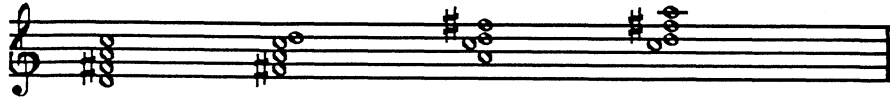
The name that describes the quality of the dominant seventh chord is **major-minor seventh**. This refers to the **major** triad and the **minor** seventh from root to seventh, which make up the chord. See example below.



3. Write a major-minor seventh chord for S.A.T.B. on each of the following notes.



Like triads, the dominant seventh chord can be inverted. Below is a dominant seventh chord of G, shown in root position and its inversions.



First inversion has the third of the chord in the bass, 2nd inversion has the fifth in the bass, and the lowest note of 3rd inversion is the seventh of the chord.

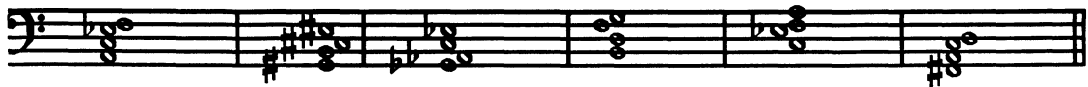
4. For the following dominant seventh chords, state the inversion, the root of the chord, and to what key each chord belongs.



Inversion: _____

Root: _____

Key: _____



Inversion: _____

Root: _____

Key: _____

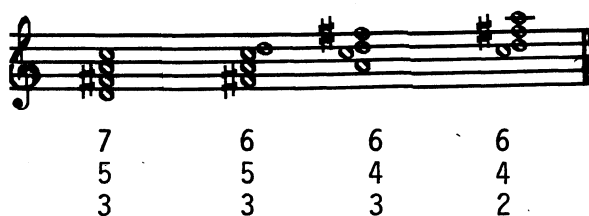


Inversion: _____

Root: _____

Key: _____

Counting up from the bass note gives the figured bass symbols for the dominant seventh and its inversions:



5. For the following, supply the Arabic numerals by counting up from the bass.



6. Write dominant seventh chords in the given inversions above the bass note as indicated by the figured bass symbols (S.A.T.B.).

Left staff: 7 5 3, 6 4 2, 6 5 3, 6 4 3

Right staff: 6 4 2, 7 5 3, 6 4 3, 6 5 3

There are abbreviations for the figured bass symbols as shown below:

7 = 7	6 = 6	4 = 6	4 = 6
5	5 5	3 4	2 4
3	3	3	2

Any accidental on its own horizontal line refers to the third above the bass. Any Arabic numeral with a slash through it means that that interval above the bass is raised.

7 # 6 5 6 4 6 #4

7. In minor keys, an accidental will always be needed to raise the leading tone in the dominant seventh chord. Write dominant sevenths above the given notes according to the figured bass symbols.

6
4
2

6
5
3

6
4
3

7
5
3

8. Supply the keys and chord symbols below the following dominant seventh chords.

Chord: _____
 Key: _____

The dominant seventh chord contains either an augmented 4th or a diminished 5th (scale degrees $\hat{4}$ & $\hat{7}$). This interval is called a tritone, no matter how it is spelled (d5 or A4). It has a very strong tendency to resolve and must be treated with care. Identify the tritones in the dominant sevenths below and write in the blank either d5 or A4.

Scale degree $\hat{7}$ is the leading tone and resolves to the tonic. Scale degree $\hat{4}$, when combined with the leading tone, resolves down to scale degree $\hat{3}$. So the augmented 4th will resolve outward, and the diminished fifth will resolve inward.

9. Resolve the tritones below in the given keys. To check them, label the scale degrees of the tritones, and make sure that the A4 resolves outward and the d5 resolves inward. The notes of resolution should be the tonic and mediant of the key.

C Major	E Major	G Major	Bb Major	D Major
---------	---------	---------	----------	---------

f minor	d minor	e minor	c minor	a minor
---------	---------	---------	---------	---------

In resolving V^7 to I, it is possible to omit the 5th of either chord. Below are some examples of dominant sevenths and their resolutions.

In order to resolve a complete dominant seventh to a complete tonic chord, the leading tone may drop down to scale degree 5 (the fifth of I) in an inner voice (alto or tenor).

10. Resolve the following dominant seventh chords. Label the chords and the key.

THINGS TO KNOW

1. Dominant seventh chords of all keys
2. How to write major-minor seventh chords on any note
3. Dominant seventh chords in root position and all three inversions
4. Figured bass symbols ($7 \frac{6}{5} \frac{4}{3} \frac{4}{2}$)
5. How to resolve dominant seventh chords

Suggestions for further study

1. Play dominant sevenths and their resolutions on the piano.
2. Write out dominant sevenths in all keys and resolve them.
3. Invert each of these dominant sevenths three ways.

CHAPTER 12 - HARMONIZING A MELODY

The most useful chords for harmonization are I and V. Some melodies can be harmonized using only these two chords. When using only I and V in root position, the only melody note involving a chord choice is the dominant, since it is common to both chords. Wherever possible, change harmony over the bar line because the ear expects a harmonic change with each new downbeat. If there are successive chords of the same harmony within a measure, try different voicings to provide variety. When going from I to V or V to I, use the common tone in the same voice where possible.

1. The soprano and bass parts are the most significant. Below are some soprano patterns which are fairly common and will work using only I and V chords in root position. Choose the appropriate chord for each, fill in the bass, and then complete the inner parts.



Supply either a I or a V chord for each melody note, and follow the voice-leading rules. Label harmony.

Bb Major



A Major



F Major



1. (cont'd)

c minor (Remember to raise the leading tone and resolve it).



d minor



e minor



1. (cont'd)

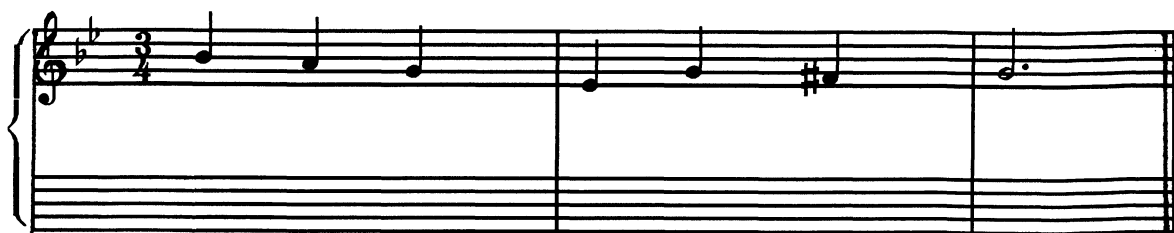
a minor (avoid augmented 2nd)



b minor



g minor



THE DOMINANT SEVENTH

It is possible to use the V7 chord instead of the V chord, to provide a little more color and more harmonic direction. When scale degree $\hat{4}$ is falling in the melody, V can't be used, but V7 can be. Usually, V7 is used at the end of a piece (in an authentic cadence) to provide a greater sense of finality. V7 should not be followed directly by V, because it weakens the pull toward the tonic chord.

1. Harmonize the following melodies using root position I, IV, V & V7 chords. Label the key.



THINGS TO KNOW

1. Change harmony over the bar line.
2. Avoid V-IV. This is a retrogression.
3. IV is usually a pre-dominant chord (followed by V).
4. When repeating a chord, a different voicing will add variety.
5. End each phrase with a cadence.

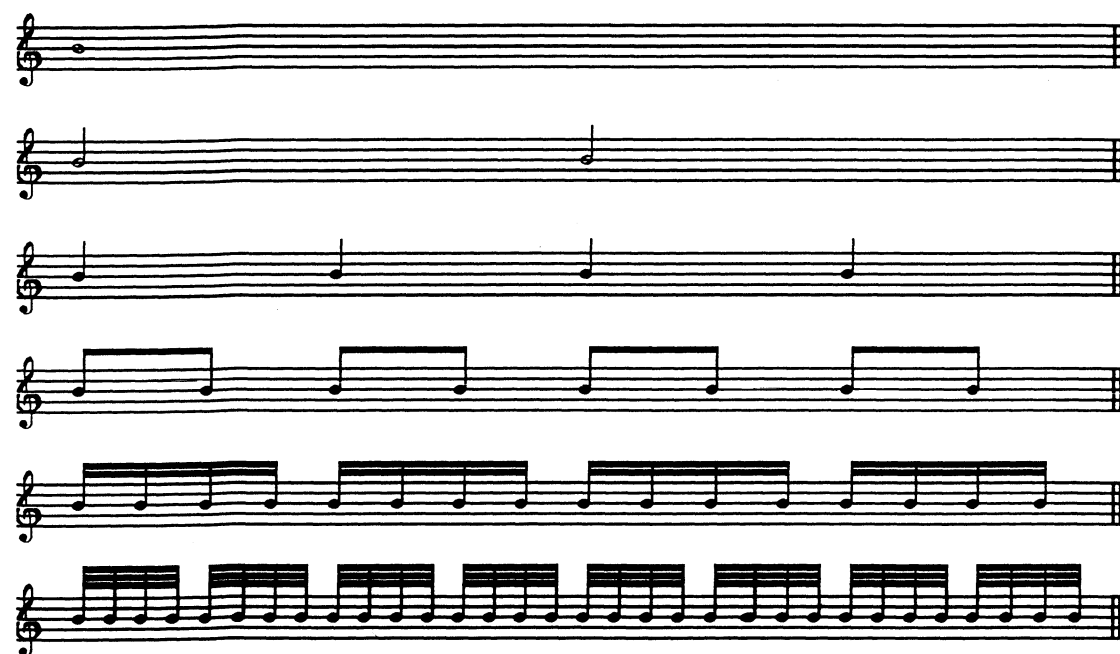
Suggestions for further study

1. Find the I, IV and V chords in hymns or any baroque or classical music.
2. Write short melodies, similar to those in this chapter, and harmonize them.
3. Play well known melodies on the piano and add I, IV and V chords where suitable.

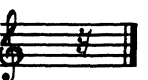
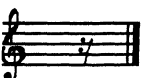
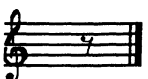
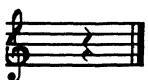
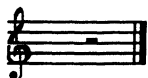
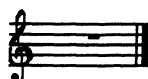
APPENDIX - RHYTHM AND METER

NOTE VALUES

Note lengths are very much like fractions in mathematics. The following chart shows how a whole note is divided up into half notes, quarter notes, eighth notes, sixteenth notes and thirty-second notes.



The following symbols are rests which indicate silences equal in length to the notes above.



The rests are placed on the staff as follows, no matter what clef is used. Important is the placement of the whole and half rest: both are placed in the third space, the half rest on the third line, and the whole rest hanging from the fourth line.



1. Add the following combinations of notes and rests, and give the answer in quarter notes (eg: $\text{♩} \text{ } \text{♩} = 3 \text{ } \text{♩}$)

a.  =

b.  =

C.  =

d. 

e. 

f. 

g. 

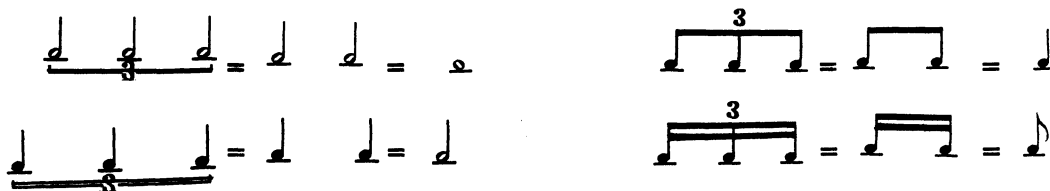
h. 

When a note or a rest is followed by a dot, its value is increased by one-half. A dotted half note for example, has the value of a half note plus a quarter note ($\text{♩}^\cdot = \text{♩} + \text{♩}$ or $\text{♩} \text{♩} \text{♩}$).

2. Continue the following charts.

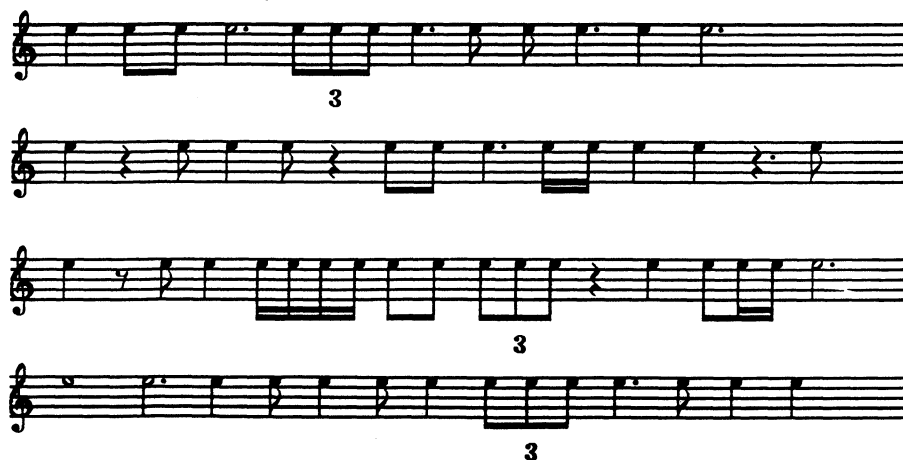
$$\underline{p} = \underline{p} + \underline{d} = \underline{d} \quad \underline{d} \quad \underline{d}$$
$$\underline{d} = \quad + \quad = \quad \begin{array}{c} \bullet \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = \begin{array}{c} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} + \begin{array}{c} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = \begin{array}{c} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array}$$
$$= \quad + \quad = \quad = \quad = \quad + \quad =$$
$$= \quad + \quad = \quad = \quad + \quad =$$
$$= \quad + \quad = \quad = \quad + \quad =$$

A note divided into three shorter notes instead of two is a **triplet**. The number 3 must be used to indicate this. The example below shows several different types of triplets and their values.

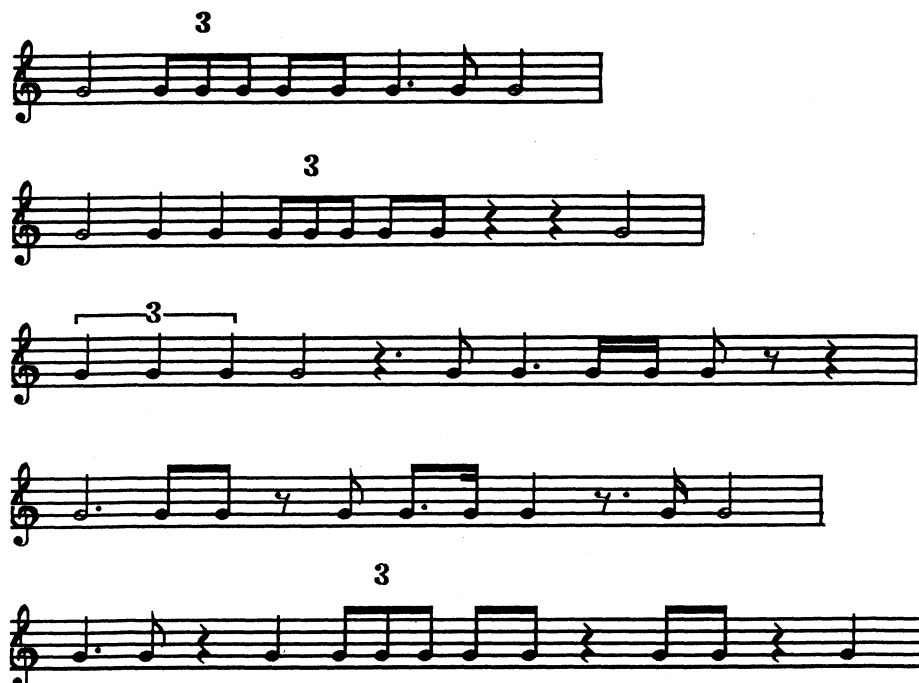


Since three notes are played in the same time as two, the triplet quarters will be faster than the regular quarters, triplet eighths faster than regular eighths, etc.

3. Make a vertical line above each quarter-note value, and clap each rhythm to a steady beat.



4. Add the following combinations of notes and rests and give the answer in half notes.



SIMPLE TIME

Music is usually divided into equal **measures** which are separated by **bar lines**. In simple time, the **time signature** tells how many beats are in each measure (top number), and what note value makes up a beat (bottom number: 4 = quarter note, 2 = half note, 8 = eighth note). The following are some examples of simple time.



Simple **duple** time has two beats per measure (eg. $\frac{2}{4}$ $\frac{2}{8}$).

Simple **triple** time has three beats per measure (eg. $\frac{3}{4}$ $\frac{3}{8}$).

Simple **quadruple** time has four beats per measure (eg. $\frac{4}{4}$ $\frac{4}{8}$).

1. Supply time signatures for the following excerpts.

COMPOUND TIME

In compound time the beat is a **dotted note**. The time signature still tells the number of notes per measure (top number), and the type of note (bottom number), but the notes are grouped by threes to make up beats. Therefore in $\frac{6}{8}$ time there are six eighth notes in each measure, but they are in two groups of three, giving two beats per measure. Below are some examples of compound time.



Compound **duple** time has two beats per measure (eg. $\frac{6}{8}$ $\frac{6}{4}$).

Compound **triple** time has three beats per measure (eg. $\frac{9}{4}$ $\frac{9}{8}$).

Compound **quadruple** time has four beats per measure (eg. $\frac{12}{8}$ $\frac{12}{16}$).

1. Supply time signatures for the following excerpts.

